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Rural Non-farm Livelihood Diversification and Poverty Reduction in Nigeria

Igwe, Paul Agu

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Rural Non-farm Livelihood Diversification and Poverty Reduction in Nigeria

By

Paul Agu Igwe

**THESIS SUBMITTED TO THE UNIVERSITY OF PLYMOUTH FOR THE
AWARD OF THE DEGREE OF DOCTOR OF PHILOSOPHY (PhD) IN
BUSINESS WITH MANAGEMENT**

**School of Management (Plymouth Business School), University of
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Rural Non-farm Livelihood Diversification and Poverty Reduction in Nigeria

Paul Agu Igwe

Abstract

The aim of this research is to provide analysis of the rural non-farm sector in Nigeria by investigating inter-linkages between farm and non-farm activities. By critical analysis using quantitative and qualitative research methods to investigate farm and non-farm sectors, the research attempts to reveal the complex linkages between these activities undertaken by rural households. The analysis employs household surveys aimed at collecting primary data undertaken to investigate various aspects of rural livelihoods including sources of income, employment, diversification and determinants of household income.

The research provides analysis of Rural Micro and Small Enterprises (RMSEs) in the non-farm sector. It investigates the sources of rural livelihoods, which are primarily based on farming activities. However, farming in this area is still carried out by about 80 percent of households in a traditional subsistence system with crude implements and in scattered plots of about 2.0 hectares or less. This subsistence farming system has resulted in increasing changes in decision making, along with dynamic processes of socio-economic and cultural changes including assets and resources which households depend on for their survival.

Diversification of income activities has become an important aspect of rural livelihoods due to continued low agricultural income and output. Non-farm income activities have the potential to reduce rising rural unemployment, providing more income opportunities for young people, women and other vulnerable groups. It can provide capital for investment in child education, home improvement, asset formation and on-farm innovation or expansion. This research argues for an integrated approach towards rural development and poverty reduction through the promotion of both agriculture and non-agricultural sectors.

Analysis of household income structure and determinants indicate that non-farm income accounts for about 44% of total household income and non-farm income has become an important source of capital for on-farm and off-farm investment. Ownership of non-farm enterprise, household labour force, level of education, age, farm size (land), financial capital (level of savings) and access to basic infrastructure are the main determinants of household income. Using disaggregated and distributional data the study found variations in effect of the various factors on household income on different groups of households.

DEDICATION

This Thesis is dedicated to my family and friends

Chief Igwe Agu

Mrs Cecila Mgbokwo Igwe-agu

Mrs Jennifer Onyekachi Igwe-agu

Miss Michelle Munachimso Igwe-agu

Author's Declaration

At no time during the registration of the Degree of Doctor of Philosophy has the author been registered for any other University award.

This study was financed by self-sponsorship.

The following activities and programme have been undertaken:

- I. Attendance and participation at staff meetings with project supervisors and Director of Studies, during which research work and progress were discussed.
- II. Presentation at various conferences and seminars.
- III. Attendance of relevant courses.
- IV. Private studies.

Word count of main body of the thesis: 59000 words.

Signed: Paul Agu Igwe

Date: 01 – 06 – 2013

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LIST OF ABBREVIATIONS

ACGSF	Agricultural Credit Guarantee Scheme Fund
AEO	Africa Economic Outlook
AfDB	Africa Development Bank
AU	African Union
CAADP	Comprehensive African Agriculture Development
CBN	Central Bank of Nigeria
DFID	Department for International Development
EBSG	Ebonyi State Government
FAO	Food and Agricultural Organisation
FGN	Federal Government of Nigeria
GCARD	Global Conferences on Agricultural Research for Development
GDP	Gross Domestic Product
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IMF	International Monetary Fund
NBS	National Bureau of Statistics of Nigeria
NEEDS	National Economic Empowerment and Development Strategy
NEPAD	New Partnership for African Development
NGOs	Non-governmental organisations
MDGs	Millennium Development Goals
ODI	Overseas Development Institute
OECD	Organisation for Economic Cooperation and Development
PPP	Purchasing Power Parity
PRSPs	Poverty Reduction Strategy Papers
RNFE	Rural Non-farm Economy
RNFI	Rural Non-farm Income
SAP	Structural Adjustment Programme
SLA	Sustainable Livelihoods Approach
SLF	Sustainable Livelihoods Framework
UNECA	United Nations Economic Commission for Africa
UNDP	United Nations Development Programme
WDR	World Development Reports (The World Bank)

Chapter one

Introduction

In the past few years, small and micro-enterprise development has been considered a key to economic development, growth, employment creation and poverty alleviation of developing countries. It is a generally accepted tenet of international development that small-scale enterprises perform a crucial role in alleviating poverty, especially in Africa countries (UN 2008, 2009). The dynamic role of small and micro-enterprises (SMEs) in developing economies as necessary engines for achieving national development goals such as economic growth, poverty alleviation, employment and wealth creation, leading to a more equitable distribution of income and increased productivity is widely recognized (IFAD 2012).

Until recently, however, relatively little has been known about the role and contributions of SMEs, especially in African rural economies. These household-based activities, which are mainly informal, are faced with numerous obstacles that affect their performance and also reduce their ability to contribute significantly to poverty reduction. These problems range from the lack of access to credit, inadequate managerial and technical skills, and low levels of education to poor access to market information and an inhibitive regulatory environment (ibid: 7). Against this background, IFAD, World Bank, DFID and many other international agencies consider the promotion of rural enterprises to be a key tool for rural poverty reduction and as the main drivers of sustainable rural development in developing nations.

For the past two decades following implementation of the Structural Adjustment Programme (SAP), democracy and other home-grown institutional reforms, Nigeria and some other African countries have achieved encouraging economic growth rates. According to Onyeiwu and Liu (2011) some African countries were amongst the best growth performers in developing economies from 2001 to 2008. In spite of Nigeria recent robust economic growth (6.9% in 2012), about two thirds of the population lives on less than 1 US dollar (USD) per day and the unemployment rate in 2011 was 23.9%, up from 21.1% in 2010 (AEO 2012). It has been suggested by some authors (for example, Onyeiwu and Liu 2011) that economic growth may have exacerbated poverty and inequality in most African countries.

Poverty in Nigeria like many other African countries is very severe in rural communities, where up to 80% of the population live below the poverty line due to lack of infrastructure and social services (IFAD 2009a). National surveys in Nigeria have consistently shown poverty as a rural phenomenon. Surveys for the past 16 years by the National Bureau of

Statistics (NBS) of Nigeria show that poverty was most widespread in rural areas, rising from 28.3% in 1980 to 69.3% in 1992 and declining to 63.3% in 2004 (NBS 2007). It has also been reported that Sub-Saharan African countries have the highest poverty rates with nearly 60% of the working population living below US\$1.25 per day (Onyeiwu and Liu 2011).

Despite the high poverty rates in rural communities, the rural sector provides the bulk of overall employment in Nigeria. The farm sector employs about two-thirds of the country's total labour force and provides a livelihood for about 90% of the rural population (IFAD 2009a). Of the total working population of 52,326,923 in 2006, agriculture and other rural activities employed a total of 30,682,234 which is more than half of the working population (NBS 2007). The percentage contribution of agriculture and other rural activities to overall economic activity in 2006 was 62% and it was nearly half (42.2%) of the contribution to national GDP in 2007 (NBS 2008). The national GDP growth rate in 2006 was 6.0% of which at about 3.0%, agriculture contributed almost half of the GDP growth rate (NBS 2007). Despite its contribution to GDP, this sector exhibits high unemployment and poverty rates. The relative poverty trend by occupation of head of household showed that those engaged in agriculture was 31.4% (1980), 53.5% (1985) and 67% in 2004 (NBS 2007).

Subsistence farming dominates income activities in Nigerian rural communities. According to Fabusoro *et al.* (2010), these rural farmers are resource poor and cultivate between 0.1 and 2.0 hectares of land. The crucial role of agriculture can be gauged from the fact that small-scale farmers produce about 90% of Nigeria's food crops and are main drivers of the rural economy (IFAD 2009a). Haggblade *et al.* (2002) maintains that the declining farm income in African rural villages drives households to undertake non-farm activities as alternative or supplementary sources of income, so as to reduce fluctuations in income from agricultural activities. In places where landlessness prevails, the non-farm sector provides important economic alternatives for the rural poor households (ibid).

The rural non-farm sector is a major contributor to employment and household income. In Nigeria, non-farm contributes up to 63% of household income (Fabusoro *et al.* 2010). IFAD (2009b: 1) state four reasons why the non-farm income is important to the rural poor as: "First, farm income obtained by poorer households is barely enough to provide family needs due to landlessness or because they own/lease little farm land. Second, agriculture employment is seasonal by nature, so the poor take non-farm sources as income supplementation. Third, non-farm activities favour the poorer households because they

require little capital and generate more employment per unit of capital than do agricultural activities. Fourth, by providing employment for vulnerable groups such as women, youths, small farmers and poor landless people, it can help to reduce income inequality”.

The non-farm sector plays several roles in the development of the rural sector. Lanjouw and Lanjouw (2001) state four roles of non-farm sector as: “First, the non-farm sector produces lower quality goods and services which are often used by the poor; good performance of this sector indirectly contributes to lowering prices to the poor households. Second, it is a major source of employment to the poor who, due to ownership of small land or high cost of land, cannot depend on farming alone. Third, through expansion into non-farm activities, it also provides a way of spreading income throughout the seasons, for households with limited access to micro-finance sources. Fourth, good performance this sector can sustain agricultural labour market, increase local wages, thereby reducing rural poverty”.

Non-farm income is often a source of expansion and investment in agriculture and other households’ capital investment. Also farm income and savings serve as sources of funds for investment in non-farm activities. The notion of livelihood diversity is based on a system that considers the activities of the rural poor people as being determined by the kind of assets, including social, human, financial, natural and physical capital (Carney 1998). Carney (1998) maintain that employment, households’ income sources, survival and coping strategies reflect ‘rural’ assets and are further influenced by the policies and institutions that surround them and other broader economic factors. These factors include markets, inflation, trade, infrastructure, urban, public policies, financial capital, land, education, social, environmental issues, etc. It is believed by the World Bank, IFAD, DFID and other international agencies that promoting the non-farm sector as an alternative means of income and employment could serve as one of the ways to reduce inequalities and poverty in the rural areas.

According to Barrett *et al.* (2001), diversification is widely regarded as a form of self-insurance in which people exchange some foregone expected earnings for reduced income variability achieved by choosing a kind of assets and activities that have low or negative correlation of incomes. This view is also shared by many other authors such as Reardon *et al.* (1992) and (2000). Fabusoro *et al.* (2010) defined livelihood diversification as attempts by people to pursue new means in order to increase household income and reduce risks, which differ sharply by the degree of freedom of choice, whether to diversify or not and the reversibility of the outcome. Ellis (1998a), state that livelihood diversification describes a

process by which households participate in a wide variety of income activities and social support capabilities as survival strategies for risk reduction and overcoming income instability caused by seasonality and low production output in order to improve their welfare.

Haggblade *et al.* (2002) states that highly diverse and heterogeneous, RNFE offers opportunities for the rural poor households as well as the rich. These authors stressed that poor people frequently seek economic refuge through distress diversification into low-skill non-farm activities, while the rich ones participate in a dynamic portfolio of more sophisticated, high-productivity and skill-intensive businesses. In the past, governments and policy makers tended to view the African rural economy as one that wholly depended only on farming alone, but there is evidence from several livelihood researches suggesting that rural households in Africa are increasingly depending on combinations of activities.

There have been numerous empirical studies on the link between economic growth and poverty. The advent of the Millennium Development Goals (MDGs) and Poverty Reduction Strategy Papers (PRSPs) have underlined the need to establish the relationship between growth and poverty. In rural areas, it is evident that the most effective means to increase income and reduce poverty is to increase the productivity of local activities which households depend on for their livelihoods. Promoting rural enterprises is vital for economic growth and poverty reduction. Local industries and small businesses generate employment and innovation and can contribute to structural transformation and the expansion of agriculture.

It has been shown by many authors that the rural economies of most regions depend on good performance of both agricultural and non-agricultural activities (Lanjouw 1999, Lanjouw and Lanjouw 2001). Haggblade *et al.* (2002) maintains that widespread economic liberalization during the 1990s has opened up rural non-farm sector as never before, creating new opportunities and new threats. This diverse collection of seasonal trading, family-based and large-scale agro-processing, manufacturing and service activities plays a major role in sustaining rural households, in servicing a growing and modern agriculture, and in supplying local consumer goods and services (*ibid*: iv). The emergence of new businesses generates employment and innovation and can contribute to structural transformation in rural areas.

The aim of this research is to understand the activities which rural people in the study area undertake, the problems they encounter, the socio-economic environment in which they operate, the resources available to them, and what influences their decision making as they

attempt to construct a living out of poverty. This research tends to achieve its aim by exploring the specific objectives provided in the overall objectives of the study.

1.1 Objectives of the Research

This study provides an analysis of rural livelihood activities using the ‘household’ as the core unit of inquiry. A typical African rural sector is considered as one in which traditional subsistence agriculture provides more than 70% of employment and non-farm activities serve as alternative or supplementary sources of income for livelihood survival (World Bank 2008).

This study identifies conceptual and empirical gap in the existing literature on rural livelihood processes (discussed in Chapter Two, Section 2.4). The research is based on the assumption that rural livelihoods have been inadequately studied and that there is lack of sufficient knowledge regarding the non-farm sector at household-level in Nigeria.

In summary, the specific research objectives are:

- a) To explore and test hypotheses identified from the literature on the determinants of household income;
- b) To describe the various forms and sources of livelihood activities, household characteristics and their economic profiles;
- c) To understand the nature and structure of farm and non-farm businesses and quantify how both have restructured over the last five years;
- d) To explore those factors which necessitate the take up of farm and non-farm activities and drive movement from farm to non-farm employment and those which hinder or slow down the process;
- e) To determine how income activities are combined and the importance of diversification;
- f) To assess and quantify the contribution of farm and non-farm employment to household income and welfare; and
- g) Finally, to describe the future implications of the findings for improving household income and poverty reduction.

In trying to address these objectives, the research hopes to develop a greater understanding of the role and importance of rural non-farm sector, where agriculture is the major source of livelihood and employment.

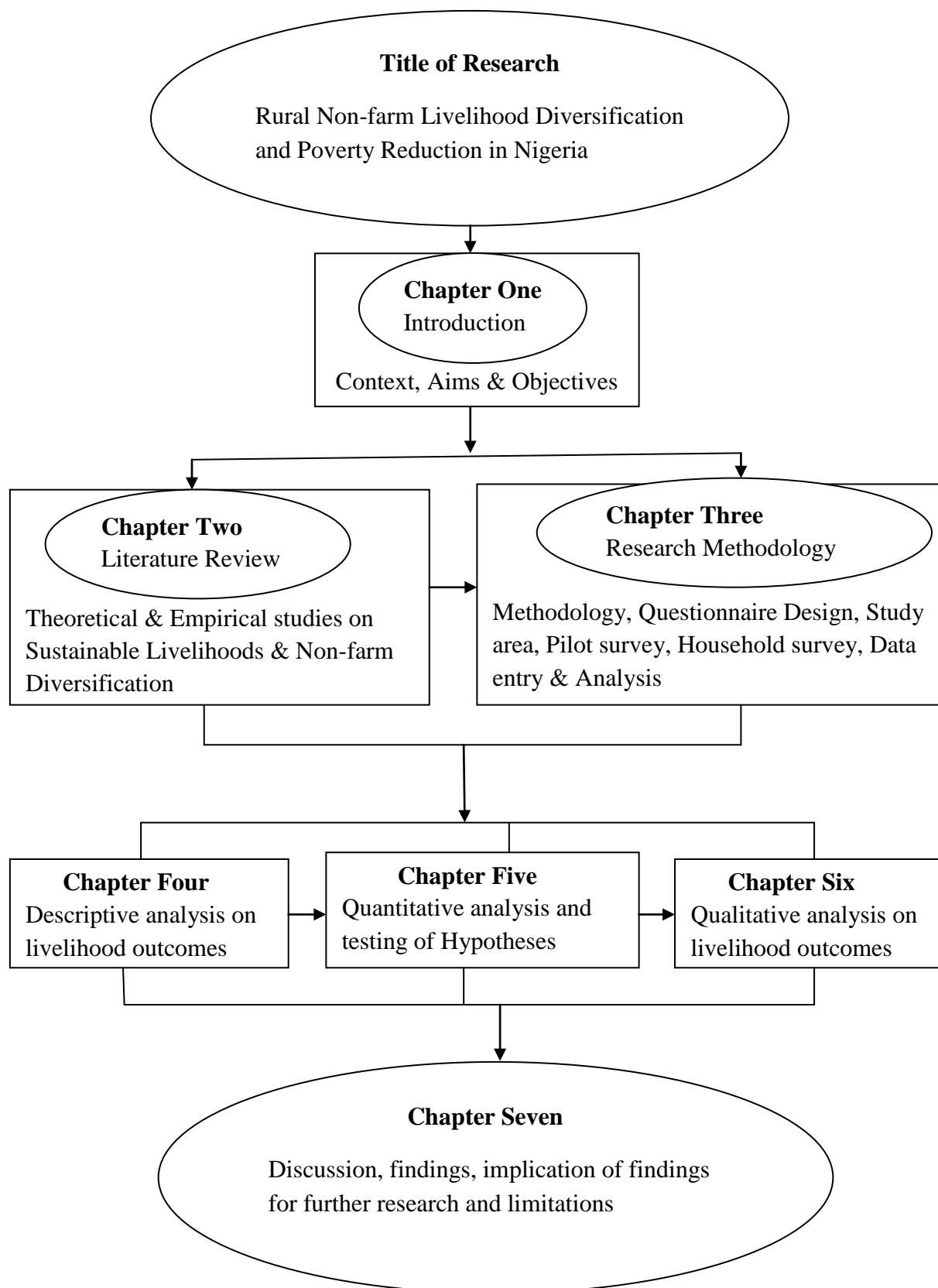
1.2 Overall description of research plan

Chapter one introduces the context of the research by providing an insight into the aims and objectives of the research. It defines the notion of livelihood strategies and importance of non-farm diversification to household income and poverty reduction. Chapter Two explores issues relating to sustainable livelihood theories and framework, agriculture, rural non-farm income (RNFI) and farm/non-farm linkages. It further reviews literature on the debate on determinants of rural livelihood income at micro-levels, exploring factors that affect household ability to participate in income activities. It examines factors that encourage or hinder people's capacity to diversify or not to diversify.

Chapter Three explains in detail the research methods adopted, choice of study area, sampling technique and research design. The research is designed to collect both quantitative and qualitative data. It explains the method of analysis adopted, as well as problems encountered collecting and analysing data. Chapter Four explores descriptive analysis, paying attention to assets, household economic profiles and vulnerability outcomes from household data while relating it to literature and work done elsewhere and discussing how the results relate or differ from existing literature. In Chapter Five, the structure, distribution and quantitative analysis of determinants of household income are presented. It also reveals some vulnerable groups identified through income or other criteria-based categorisation.

Chapter Six presents the result of qualitative analysis on livelihood vulnerability, assets and outcomes, including survival and coping strategies by rural households. Chapter Seven discusses, summarises and concludes what has been done in the research and states findings, future options for further investigation and the limitations of the research. Figure 1.1 summarizes the structure and processes of this research in a chart.

Figure 1.1 Structure of the Research Thesis



Chapter Two

Sustainable Livelihood and Non-farm Diversification - Literature Review

2.1 Introduction

This Chapter discusses theories and background studies on sustainable livelihood approach and framework and also reviews literature on non-farm diversification. The aim is to describe the fundamental issues in rural livelihood and to relate the work done by other authors elsewhere to this research. Researchers studying rural livelihoods have stressed the importance of non-farm income activities and that livelihood activities undertaken differ between households and by location. For example, the pattern of income diversification between farm and non-farm sectors varies sharply across regions and it is clearly linked to the assets or endowments of rural people (Escobal 2005).

The study reviews literature on concepts of sustainable livelihood approaches, diversification and rural farm/non-farm economy from the broader concept and knowledge. It is intended to reveal what instrument is necessary and those that have been successful or unsuccessful as a mechanism for increasing household income and poverty reduction. Several authors have stated that livelihood differs in many contexts, often differentiated according to regions, location, gender, age, class and culture and usually structured by a range of motivations, barriers, assets and opportunities (Ashley and Maxwell 2001, Ellis 2001a).

2.1.1 The Theory and concept of Rural Livelihood

The concept of livelihood and sustainable livelihood framework has become an integral part of rural development and poverty reduction in recent times. Rural livelihoods are composed of the activities that provide the means of household survival and long-term wellbeing (Stephen and Lenihan 2010). Chambers and Conway (1992) defined livelihood as that which constitutes people, their capabilities and their means of survival including food, income and asset formation. Stephen and Lenihan (2010) state that livelihood strategies may be classified into natural resources based activities (e.g. collection and gathering, cultivation, livestock-keeping, etc) and non-natural resources based activities (e.g. trade, services, remittances).

The literature show that in the past, rural development focused on promotion of modern agriculture for poor households to guarantee food security (FAO 1998, Sen 1981, Ellis & Biggs 2001, Ashley & Maxwell 2001, Carney 2002). Most recently the emphasis has been on diversification to promote non-farm activities (Ellis 1998a), sustainable livelihoods (Carney

1998 & 1999, Drinkwater and Rusinow 1999, Ellis and Biggs 2001, Scoones and Wolmer 2003, DFID 1999 & 2007, IFAD 2009d), access to natural-based resources and opportunities (Freeman *et al.* 2004) and the provision of social support services to aid vulnerable and landless households (Devereux 2002, Kabeer 2002, Morduch and Shamar 2002).

Literature on livelihoods focuses on issues concerning the coping, survival and different approaches that rural people adopt in response to socio-economic and environmental factors they encounter in their pursuit of household income and food. These coping mechanisms involve making decisions about present and future strategies through selecting investments, production system and employment options. Many authors have shown that the declining farm income and market failures in African countries drives rural people to undertake non-farm activities as supplementary sources of income so as to reduce the fluctuations in household income (Barrett *et al.* 2001, IFAD 2009b, Fabusoro *et al.* 2010).

Non-farm activities tend to have low entry requirements such as financial capital, skills and education that makes it attractive. Barrett *et al.* (2001) note that non-farm is typically positively correlated with income and wealth in rural African countries, and seem to offer a pathway out of poverty if non-farm opportunities can be seized by the rural poor. The recognition of small-scale activities as important sources of income has led to the placement of the non-farm sector at the centre of rural livelihood approaches by DFID and IFAD.

2.1.2 The Rural Non-farm Economy (RNFE)

There is little empirical literature on the structure and processes of rural livelihood in Nigeria and other sub-Saharan countries. It is also poorly understood with regards to its role and contribution to poverty alleviation and broader national economic development process. Reardon *et al.* (2002) note that the present structure of the rural non-farm sector in developing economies results from an on-going economic transformation that has proceeded through many generations and at varying speeds in different countries and regions.

Rural non-farm sector refers to all rural economic activities outside of farming. According to Haggblade *et al.* (2002), it includes self or wage employment, full-time or part-time, formal or informal, seasonal and occasional local manufacturing or production. These authors maintain that the process typically begins with a rural village dominated by self sufficient and households producing most of farm and non-farm goods and services they need. Gradually, as the rural population increases, local demand and market access increases, new

technologies and new farm inputs becomes available, leading to increased agricultural surpluses in some products and increased opportunities for trade (Haggblade *et al.* 2002).

It has also been stated that households diversification into non-farm opportunities develops naturally from diminishing returns to labour or land, from market failures (for credit) or transactions (for mobility or entry into high-return niches), from *ex ante* risk management, and from *ex post* coping with adverse shocks (Barrett *et al.* 2001). Haggblade *et al.* (2002) state that as rural farm economy grows it stimulates growth of the RNFE through a number of key linkages as:

- rising labour productivity on the farm increases food supplies and releases family workers to undertake non-farm activities;
- increases in farm incomes, together with high rural savings rates, make capital available for investment in non-farm activities;
- as agriculture modernises and its productivity grows, it requires additional inputs and services such as seeds, fertiliser, credit, pumps, farm machinery, marketing and processing of output which create a growing demand for non-farm firms providing these inputs and services; and
- as their incomes increase, farm households, like good consumers everywhere, spend much of their new income on a range of consumer goods and non-farm services.

Source: Haggblade *et al.* (2002: 5)

Lanjouw and Shariff (2002) stated that in the early 1970s, the literature revealed a virtual cycle developing through green revolution technologies (for example, Mellor and Lee 1972, Mellor 1976), whereby increases in agricultural output and incomes of farmers would be magnified by multiple linkages with the non-agricultural sector. These authors explained that the linkages were both backward and forward processes. According to them, the backward linkages evolve through the demand of farm inputs such as, improved seeds, pesticides, fertilisers, tools and machinery. In the same way, the forward linkages develop through higher processing demand for agricultural products. Also, consumption linkages were also thought to be important as farm income increases; as it leads to an increase in demand for goods and services produced in nearby towns and communities (*ibid*).

The literature also shows potential linkages between farm and non-farm involving the supply of labour and capital to each other. Lanjouw and Shariff (2002) maintain that with increased productivity in farming either labour is released or wages go up and the new agricultural surplus would be a source of capital for investment in the non-farm sector. To complete the circle, the authors stated that growth in the non-farm sector stimulated further growth in agricultural productivity via lower inputs costs (backwards linkages), and profit invested back into agriculture and technological changes. Thus growth in the two sectors would be mutually reinforcing with employment and incomes increasing in a dispersed pattern (ibid: 7).

Haggblade *et al.* (2002), explain that as the transformation process evolves in the rural communities, people begin to specialise in their individual skills, taking into account the local resources, market and employment opportunities available to them. These authors suggest that some non-farm local activities initially undertaken by rural households for their own consumption transform into commercial activities. As a consequence, greater trade develops between rural households, small village market centres and rural towns (ibid: 5). This structural transformation process helps to develop infrastructure which leads to reduction in production and transportation costs and increase market access in rural communities.

Several authors have shown that the rural sector transforms as development processes take place and the changes also affect the kinds of opportunities available in rural areas. In their study of rural-urban growth linkages, Hazell and Haggblade (1990) note that local industries and services dominate non-farm sector in rural villages of India, with growth in commerce and services, accompanied by a shift from local to industrial manufacturing, as one moves to urban centres according to Lanjouw and Shariff (2002). The same changes evolve as one moves from low to high productivity centres and even allow for the growth of traditional handicraft sector when an export market is successfully developed (ibid: 9).

The literature shows that as linkages between rural and urban communities proceed, urban towns become important centres for labour, goods and services. As noted by Haggblade *et al.* 2002, this in turn creates new market opportunities for local agricultural and rural non-agricultural activities. This process increases the demand for rural farm products, thereby increasing economic activities between the rural and urban communities. Haggblade *et al.* (2002) state that the higher demand on urban goods that results through this linkages, leads to increased sub-contracting of many small-scale manufacturing processes to local non-farm industries, increasing income and employment opportunities in surrounding rural

communities. These linkages from rural towns to their surrounding rural hinterland take on particular importance as rural villages become better integrated into the national urban economy, as they develop manufacturing and service activities that serve urban and export demands in addition to rural demands (ibid: 6).

It has been shown in several studies that the growth of the rural non-farm economy depends on urban-rural linkages, institutions and the state of public infrastructure and services. The RNFE absorbs rural surplus labour, offers more profitable activities to supplement or increase farm income, exploits local comparative advantages (resources, location and labour costs), fosters rural growth and improves the welfare, goods and services in rural areas (Davis and Bezemer 2003). The literature shows that some public policy and institutional factors can aid or hinder people who wish to expand their livelihood income activities (Ellis 2001a).

2.1.3 Livelihood Diversification processes

The central focus in the debate on livelihood diversification centres on understanding the reasons why people diversify their assets or engage in diverse income activities and the concept of coping and survival-driven strategies which rural households adopt in poverty situations (Ellis 1999, Devereux 1993a and 1993b). Diversification has become a livelihood pathway and strategy for rural household to sustain and increase their income.

Livelihood diversification is a term used to describe the composition of income activities available to rural populations and their contribution to the overall household well-being, according to Reardon *et al.* (2007). Current understanding of poverty places considerable emphasis on ownership or access to assets and resources that can be put to productive use as a base by which the poor can construct their own pathway out of poverty (Ellis *et al.* 2003, Ellis and Freeman 2004). There are two types of income diversification – the period of capital accumulation and activity-driven diversification which occurs after capital accumulation has taken place (Davis and Bezemer 2003). There is also diversification as a result of economies of scope. Economies of scope describe when the same inputs generate per-unit profits when spread across multiple outputs than dedicated to any one output (Barrett *et al.* 2001).

Rural livelihoods are thus maintained from a combination of assets, resources and activities which are becoming more complex and diverse, cutting across economic sectors and which many governments and agencies tend to be ill-equipped to support because of the diversity and complexity of the rural sector (Ellis 2001). Livelihood diversification enables households

to survive the unfavourable rural environment by mitigating seasonality and spreading risk to reduce vulnerability to adverse trends and stress (Ellis 2001a, Davis and Bezemer 2003). It has also been suggested that self-employment offer benefits of flexibility, adaptability and cultural acceptability that is otherwise unavailable in labour market (Start and Johnson 2004).

Several authors (Ellis 1998b, Hussein and Nelson 1998) suggest that the determinants of rural livelihood diversification are influenced by over-bearing factors of necessity and choice. These authors maintain that necessity is the major involuntary and distress factor that drives poor people to diversify their income activities as a response to conditions mainly for survival or coping strategies. Similarly, it becomes a result of choice if it involves voluntary and proactive decisions undertaken by some people (possibly less poor or well-off) to invest in various kinds of assets, as a means for wealth formation that provides some long-term livelihood security (Ellis 1998b).

Several authors identify factors of necessity and choice as the main drivers of livelihood diversification processes (Bryceson 1996, Dercon and Krishnan 1996). These authors believe that ‘people’s motives to minimise the risk of ‘livelihood failure’ as the main factor that influences their livelihood diversification strategies. It has also been suggested that livelihood diversification reduces the potentially damaging effects of food and other local products markets imperfections, thus facilitating production and consumption, smoothing inter-seasonality over several years, ensuring continuous secure livelihoods and food security for the poor people (Davis and Bezemer 2003).

There are two kinds of diversification trend in the rural sector. On one hand, diversification takes place (survival strategy) because of increasing rural population growth, land fragmentation, increasing input cost, adverse environmental conditions, diminishing access to agricultural markets, declining farm income and lack of access to public services (Ellis 2001a). On the other hand, diversification evolve either as a coping strategy where it is an enforced response to failing agriculture (distress-push) or as opportunity mechanism where the economy is growing and opening markets (demand-pull) (Davis and Bezemer 2003).

According to Haggblade *et al.* (2002), the global economic liberalisation during the 1990s has opened up the rural non-farm sector as never before – to new opportunities and to new treats. Kusters (2010) explained both distress-push and demand-pull diversification situations as: “In the first case (distress-pull diversification), people are pushed towards non-farm activities as they try to diversify their income sources in an attempt to reduce vulnerability

and avoid falling deeper into poverty. In the second case, (demand-pull diversification), people are pulled towards non-farm activities as a response to opportunities to accumulate household income” (ibid: 320).

Davis and Bezemer (2003) maintain that distress-pull diversification occurs in an environment of risk, market imperfections and of hidden agricultural unemployment and is usually facilitated by economic diversity which takes the household on a downward income trajectory. The authors maintain that demand-pull diversification is a response to evolving market and technological opportunities to increase labour productivity and household income. It has also been suggested that ‘poorer people and households’ engage in non-farm activities as survival-driven rather than opportunity-driven strategy (ibid: 5).

Non-farm local activities include all economic activities in rural areas except agriculture, livestock, fishing and hunting. It includes all off-farming activities, processing, marketing, manufacturing, wage and casual local employment in the rural villages. Several authors suggest that the highly diverse and heterogeneous rural non-farm sector offers opportunities for the poor as well as the rich. Poor households frequently seek economic refuge through distress diversification into low-skill non-farm employment such as basket making, pottery, small-scale retailing and seasonal labour migration (Reardon *et al.* 2002). On the other hand, the rich engage in the more sophisticated, profitable, high investment activities such as transportation, processing, contracting and manufacturing (Barrett *et al.* 2001).

A study of rural households in Tanzania showed that agriculture provided about 50% of household income, while the remaining 50% came from non-farm income activities (Chapman and Tripp 2004). It has been suggested that poorer households are most dependent on agriculture and reliance on agriculture decreases with increased diversification into non-farm activities (Ellis and Mode 2003). Despite the image of Africa as a region of ‘subsistence farmers’, non-farm sources account for as much as 40 – 45% of average household income and seem to be increasing in importance (Barrett *et al.* 2001). World Bank (2008) concludes that three powerful and complementary pathways out of rural poverty are: smallholder farming, off-farm labour in agriculture, the rural non-farm economy and migration.

The rural non-farm economy (RNFE) accounts for roughly 25% of full-time employment and 35-40% of rural household income in developing regions (Haggblade *et al.* 2002). A study of 11 countries in Latin America found that in Brazil, the share of rural non-farm income is 39%; however, the highest levels were found in zones where agriculture was successful, such

as the coffee and sugar zones of the Southern regions (Reardon *et al.* 2002). Agro-industrialization and urbanization contributed to higher non-farm income share in South-eastern Brazil than the North-eastern region, maintain the authors. Escobal (2005) show that the growing importance of non-farm sector accounts for roughly 25% of employment and as much as 40% of household income in rural Latin America (32% in Asia and 42% in Africa).

There is a wide range of rural non-farm activities and can be classified or distinguished in many ways. The literature provides a classification of diversification that identifies three main types of activities in Africa. These activities includes, rural services such as beer brewing and brick making that are commonly provided in remote villages; commercial activities that occur between rural and urban communities for local goods and services; and transfer payments (remittances from migrated household members) in areas with mobile populations working in both rural and urban areas (Bryceson 2000).

The literature shows that when the poor migrate to find work due to unemployment or underemployment in the rural areas, they often sell off or rent out their land or other assets. They proceed to engage in non-farm activities (wage employment or self-employment) to earn income, in order to increase their income and provide for their households. This situation often results in shortage of agricultural labour in rural areas. For example, the Post Oil-boom in the 1970s and advent of democracy (since 1999) in Nigeria witnessed migration from rural to urban in search of better paying jobs, new opportunities and higher education, thereby leaving most rural areas with less labour for agricultural production. According to Chapman and Tripp (2004), these ‘coping strategies’ can lead to downward spirals of income and deeper poverty when the non-farm sources become unsustainable.

In most African villages, migratory opportunities are often pursued by male household members migrating out of the villages, leaving women behind to manage farm and non-farm activities. This leads to feminisation of farm production as women take a wide range of tasks in order to maintain the food requirement of their household on a small-scale (Chapman and Tripp 2004). However, this trend can result to empowerment and improvements in family welfare as women receive higher income. It has been suggested that the extended family structure, which is most common in Nigeria influences access to migration, thereby increasing remittances and non-farm income (Fabusoro *et al.* 2010).

It is well known that rural households undertake a range of farm and non-farm activities. But it is not clear however, to what extent income generated from non-farm sector is reinvested in

farm production. Many authors believe that income surpluses generated off-farm can provide farmers with the capacity that enables greater on-farm improvement. However, this depends on whether rural farmers have diversified out of farming due to lack of opportunities for on-farm innovation and expansion or they are exploiting a particular high demand for their labour off-farm (Chapman and Tripp 2004).

Three quarters of the poor live and work in rural communities and the majority will continue to do so in 2025 (IFAD 2001). Rural development and livelihood policies need to promote small-scale farming and non-farm enterprises in order to reduce rural income inequality and poverty. This is vital since rising farm productivity is a driver of the rural non-farm economy, with linkages both from production (processing and agro-industries) and consumption (increased demand for manufactured products) according to ODI report (2002/2003).

2.1.4 Sustainable Livelihoods Approach (SLA)

The Sustainable Livelihoods Approach is a means of analysing and understanding the activities, assets, opportunities and needs of rural people. It describes the various assets, structures, processes and methods that rural people adopt in pursuing their livelihoods, as well as the main factors affecting rural people and the inter-relationships between these factors. It is a new development thinking from international development agencies (notably DFID and IFAD), useful in planning new strategies and in assessing existing development policies. The two key components of the SLA according to IFAD (2009d) are:

- *Framework* that helps in understanding the complexities of poverty; and
- Set of *principles* to guide action to address and overcome poverty

The ‘sustainable livelihoods approach’ is a product of ideas and interest from debates on the various aspects of integrated rural development, sustainable development and poverty reduction strategies. According to Ellis and Biggs (2001), the notion shifts attention from exclusion and marginalisation of households from the benefit of economic growth to exploration for more effective means to support people and communities in ways that are more meaningful to their daily lives, needs and aspirations. It focuses attention on the kinds of assets owned by local people and the rural opportunities available to the people as a means of reducing the vulnerability or poverty caused by a combination of effects of trends, shocks, choices, culture, geographical and climatic conditions. This approach is being employed by

governmental, non-governmental and development agencies such as UNDP, DFID and IFAD as a means for accelerated rural development, policy intervention and poverty reduction.

“A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base” (DFID 1999: 1).

The underlining principle in the sustainable livelihoods concept involves the identification of assets and resources available or accessible to rural people. These assets, according to Ellis and Biggs (2001) constitute a stock of capital which can be stored, accumulated, exchanged, transformed into use-values and reproduced to counter the negative effects of the trends, shocks and seasonal changes on livelihoods and can be analysed at individual, household and communities levels. It proposes that for livelihoods to be sustainable, all the social groups represented by these levels of analysis should be able to meet their basic needs (food and income) without compromising the natural resources or environment of their communities.

Two contexts make up SLA; first is asset vulnerability and second, issues that focuses on capital assets in terms of economic, social, human, physical and natural resources as the basis on which people construct diverse income activities (Carney 1998, DFID 1999 & 2007). According to these authors, the first issue deals with factors that make households or individuals vulnerable, which includes, population, resources and technology, shocks such as ill health, conflict and economic shocks, as well as seasonality of prices, production and employment opportunities. These are the underlining factors that determine the processes of livelihoods and dictate the income activity options, which people can pursue or otherwise.

Reardon *et al.* (2002) maintain that a sustainable and vibrant livelihood framework allows people to pursue robust livelihood means that provide layers of resilience that not only enable people to cope with change but create the potential to translate adversity into opportunity. The system describes strategies that can help eliminate poverty both at individual, household, community and regional levels such as agricultural improvement, non-farm diversification, infrastructure provision, migration, new technology, skills training, education and numerous other means. The framework is neither a model that aims to incorporate all the key elements of people's livelihoods, nor a universal solution (IFAD 2009d).

2.1.5 Sustainable Livelihood Framework (SLF)

The SLF places people, particularly rural poor people, at the centre of a web of inter-related influences that affect how these people create a livelihood for themselves and their households in their communities (DFID 2007). The main components of the framework are the resources and livelihood assets that people have access to and use (IFAD 2009d). These include natural resources, technologies, skills, knowledge and capacity, good health, access to quality education, sources of credit and network of social welfare support system.

The extent of people's access to these assets is strongly determined by their vulnerability context, which takes account of trends (for example, economic, political and technological), shocks (for example, epidemics, natural disasters, civil strife) and seasonality (for example, prices, production, and employment opportunities) (IFAD 2009d). Access is also influenced by the type of social network support, policies and political institutions, which affects people's ability to combine and use their assets to achieve their goals.

DFID (1999 & 2007), Carney (1998), Drinkwater and Rusinow (1999) and Ellis (2000) have all shown frameworks for analysing rural sustainable livelihoods. It identifies the complexity of livelihoods and helps to understand the myriad influences on rural poverty (de Haan 2006). The system identifies the many diverse chains of interactions that take place in the rural sector, including the asset base and environment upon which households pursue their livelihoods. According to some authors, it recognises that people must have access to resources known as capital assets (natural, financial, physical, human and social) if they are to engage in livelihood that are sustainable (Carney 1998, DFID 1999 & 2007).

The kind of political institutions (government policies, community actions and private sector participation) can influence access to capital assets, the type of activities people engage in and also make such activities unattractive or attractive (Chambers and Conway 1992). These institutions can provide the enabling environment in which people become less vulnerable and therefore are able to participate in coping livelihood strategies within the short term or adapt to the environment in the long term (Chambers and Conway 1992, Scoones 1998, Carney 1998 & 1999, Drinkwater & Rusinow 1999, Freeman *et al.* 2004 and de Haan 2006).

There is also the 'Household Livelihood Security' (HLS) framework which describes a system that caters for adequate and sustainable access to income and other resources to

enable households to meet their basic needs and build up assets to withstand and recover from shocks and stresses according to Drinkwater and Rusinow (1999).

SLA has seven guiding principles which are flexible and adaptable to diverse local conditions and according to IFAD (2009d) are:

- ***Be people-centred.*** SLA begins by analysing people's livelihoods and how they change over time. The people actively participate throughout the project cycle.
- ***Be holistic.*** SLA acknowledges that people adopt many strategies to secure their livelihoods, and that many actors are involved; for example the private sector, ministries, community-based organizations and international organizations.
- ***Be dynamic.*** SLA seeks to understand the dynamic nature of livelihoods and what influences them.
- ***Build on strengths.*** SLA builds on people's perceived strengths and opportunities rather than focusing on their problems and needs.
- ***Promote micro-macro links.*** SLA examines the influence of policies and institutions on livelihood options and highlights the need for policies to be informed by insights from the local level and by the priorities of the poor.
- ***Encourage broad partnerships.*** SLA counts on broad partnerships drawing on both the public and private sectors.
- ***Aim for sustainability.*** Sustainability is important if poverty reduction is to be lasting.

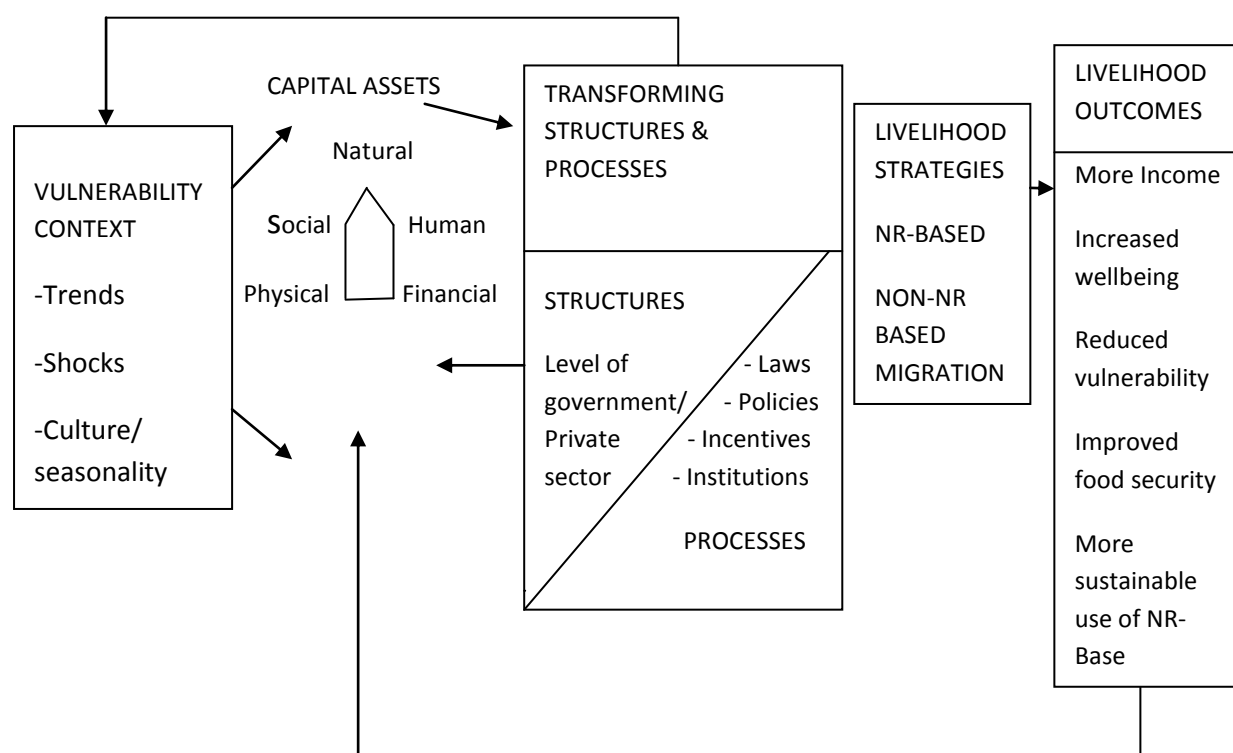
Source: (IFAD 2009d: 4)

The assumption is that people take on a range of income activities by depending on a range of assets or resources available to them. The livelihood activities rural people adopt, the manner they invest or reinvest are driven by their own choices and priorities or are influenced by the types of vulnerability such as shocks, trend and climatic or seasonal variations (Carney 1998 and DFID 1999). Figure 2.1(a) describes the Sustainable Livelihoods Framework which can be found in Carney (1998: 5) and DFID (1999).

“There are three insights into poverty which underpin the SL approach. The first is the realization that while economic growth may be essential for poverty reduction, there is not an automatic relationship between the two since it all depends on the capabilities of the poor to take advantage of expanding economic opportunities. Second, there is the realisation that

poverty – as conceived by the poor themselves – is not just a question of low income, but also includes other dimensions such as bad health, illiteracy, lack of social services, etc., as well as a state of vulnerability and feeling of powerlessness. Finally, it is now recognised that the poor themselves often know their situation and needs best and must therefore be involved in the design of policies and project intended to better their lot” (Krantz 2001: 2).

Figure 2.1(a) Sustainable Rural Livelihood Framework (SLF)



Source: Carney (1998: 5)

Key: NR= Natural Resources

The ability of people to pursue different livelihood options depends upon the basic conditions and materials which represent assets that people own or depend on for their survival. From Figure 2.1a, these assets include human capital, physical capital, social capital, financial capital and natural capital which people depend upon for their livelihood. The availability or lack of these assets also determines the extent of vulnerability, inequality and poverty.

Human Capital – refers to the knowledge, skills, quality of labour, good health and ability to pursue different livelihood strategies (Carney 1998, Scoones 1998, DFID 1999 & 2007). Human capital also includes nutritional components which determine physical,

psychological, mental and social capabilities of people to pursue different livelihood strategies (World Bank 1997 and IFAD 2009d).

Physical Capital – describes the basic infrastructure facilities such as road, transport system, housing, water, energy and communications, production equipment and the means that enable people to pursue employment and income activities (Carney 1998, DFID 1999 & 2007).

Social Capital – represents network of social organisations such as family associations, social clubs, co-operative unions, relationships of trust and access to wider institutions of welfare support that enable people to interact with others and pursue their respective livelihood targets (Carney 1998, DFID 1999 & 2007). It also involves wider interactions outside the communities which people use as a medium to pursue different livelihoods.

Financial Capital – refers to the financial resources which are available to people in form of savings, credits, remittance, grants or pensions and which enables people to increase investment or pursue different income activities (Carney 1998, DFID 1999, IFAD 2009d).

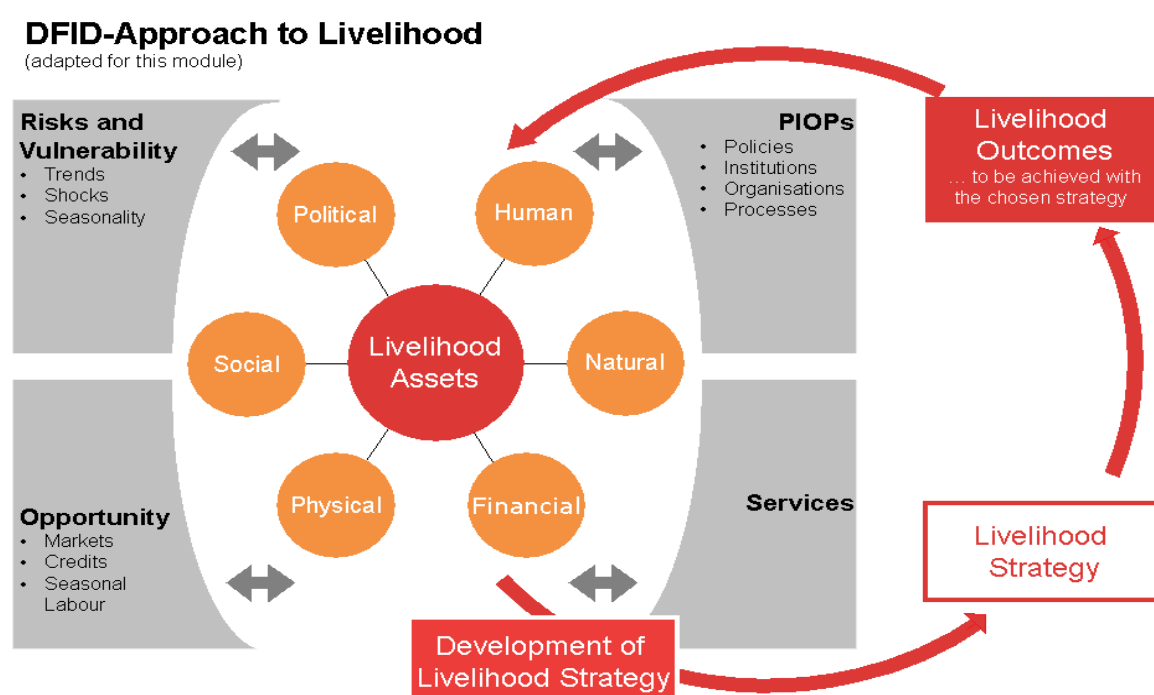
Natural Capital – refers to natural resources available within the communities that support various livelihood options. They include land, water, wildlife, biodiversity, forest and wider environmental resources (World Bank 1997, Carney 1998, DFID 1999 & 2007).

‘Vulnerability Context’ describes the structures and processes that lead to people’s vulnerability to livelihood insecurity (DFID 1999). It includes livelihood forces such as trends, seasonality, shocks and cultures upon which livelihood decisions are based. Shocks could be in the form of floods, droughts, civil wars, famine, pests and disease outbreaks. Trends are demographic and ecological changes that take place over time such as prices, inflation, markets, etc. Finally, seasonality and cultural differences are the other aspect of vulnerability contexts of livelihoods approaches described in the SLF (Figure 2.1a & b).

DFID (2007) maintain that SL approaches must be underpinned by a commitment to rural poverty eradication. Although SL can, in theory, be applied to the work with any stakeholder project, an implicit principle for DFID is that activities should be designed to maximise livelihood benefits for the poor local people, according to the DFID (2007). Some important dimensions appear to be under-emphasised in the SLF described in Figure 2.1(a) or are not made elaborate enough cover all aspects of Sustainable Rural Livelihood. In this regard, DFID have extended the ‘vulnerability context’ described in Figure 2.1(a) to include the ‘context of opportunities’ (markets, credits and seasonal labour) as in Figure 2.1(b).

The DFID framework does not provide an explicit mechanism for dealing with crucial elements of decision-making, such as people's individual orientations and collective worldviews or their experience and emotional attachments (DFID 2007). It is important to remember these ‘missing’ aspects in the SLF and to use different mechanisms to ensure that the framework feeds into the overall poverty reduction and rural development planning (ibid: 4). Power and gender concepts are the other current livelihood issues of interest to DFID.

Figure 2.1(b) DFID – Sustainable Livelihood Approach



Source: DFID (2007: 4)

2.1.6 Assets and Livelihood Vulnerability Approaches

The literature shows that the concept of livelihood vulnerability differs from that of poverty. Whereas poverty is seen to be static, vulnerability is perceived to be dynamic and captures processes of transformation that take place as people move in and out of poverty trend (Moser 1998). The general notion of vulnerability includes a range of external and internal livelihood factors. The external factors, according to Moser (1998), generate risk, hazards, shocks and stress in coping with emergencies to which people are differentially subjected.

The internal factors represent people's own defencelessness or resilience against negative forces due to lack of the means to cope with potentially damaging conditions (ibid: 3).

Heyer (1989) defined 'livelihood vulnerability' framework as the process of ownership of, and access to, various types of assets which increases the socio-economic capability and bargaining power of those who have them such that the more different types of assets people own or have access to, the less vulnerable they would be to a livelihood failure. The livelihoods of the majority of the poor population are confronted with acute food and nutritional shortages caused by seasonality, famine and civil war (Devereux 2001). International trade, globalisation, economic reform, financial crisis, climate change and demographic transition are the other factors of livelihood security (Kabeer 2002).

Drinkwater and Rusinow (1999) described livelihood security as a system that facilitates adequate and sustainable access to income and other resources to enable households to meet basic needs and recover from shocks and stresses. Some factors have been identified specific to individuals or households that determine their vulnerability. Devereux (2001) state that these factors include household's relative wealth, access to alternative income sources, the kind of support households receive from other family members and social network available.

The concept of vulnerability is closely associated with asset ownership, hence individuals, households or communities are regarded less vulnerable if they have larger asset holdings and vice versa (Devereaux 2001). Another aspect of vulnerability is the capability to manage assets (that is ability to transform assets into food and other basic needs) according to Moser (1998). Swift (1989) identifies a system that shows production, exchange, consumption and asset formation processes as key to the understanding of how vulnerability is created, perpetuated and reduced. Assets in this framework include investments in humans (education, skills and health) and materials (land, animals, infrastructure, equipments, properties and stored crops) which provide assistance in time of stress or income failure.

"Livelihood strategies tend to be organized around both immediate and long-term goals and they also incorporate security and the capacity to cope with crisis. Poor households who cannot prepare in advance against crisis are more vulnerable. They find themselves in a position whereby they have less bargaining power for wages, better prices for their products, favourable credits and are therefore subjected to conditions that will make them unable to recover or protect themselves from future crisis. Also when households rely on coping

strategies that cannot be reversed, they are likely to be most vulnerable and exposed to crisis for longer period” (Kabeer 2002).

Some authors have suggested that poor households who face risk in times of uncertainty resort to a number of coping mechanisms that involve reductions in expenditure. Kabeer (2002) described the coping processes as: Households initially fall upon their own savings in form of capital (insurance mechanisms). If the situation persists, they go on to sell off productive assets and properties (such as land) at distress prices before embarking upon destitution behaviour such as distress migration. Some households go on to cut consumption, rent out their land or borrow and diversify into non-farm activities or migrate. In some situations, households will reduce or cancel planned investment activities, pull out children from school either to save money or to put them in the labour market or increase their reliance on social services and family support mechanisms (ibid).

Several authors have expressed concern with livelihood insecurity by suggesting the setting up of social protection network for the poor as safety ladders to help people manage risks (Devereux 2001 and 2002, Kabeer 2002). These authors have argued that social protection programmes will assist poor households to reduce unnecessary exposure to stress, deal with adverse events and help develop human capital resources.

The literature proposes two kinds of social protection strategies. First, food or cash transfer and school feeding scheme and second, micro-finance services to the rural poor (Devereux 2002). It is assumed that the rural poor are either underemployed or unemployed hence cash transfer programmes will provide additional income to support the poor. For example, school feeding scheme will improve enrolment and attendance of poor school children as well as their educational performance (ibid). On the other hand, microfinance schemes provide small loans that enable households increase their incomes and savings (self-insurance), cope with consumption needs and start or expand farm and non-farm businesses.

There have been criticisms against social protection strategies with regards to their operation. For instance, micro-finance fails to reach the poor in remote rural locations. Sometimes, such programmes are introduced too late to guarantee effective social protection that will influence risk taking behaviour of the targeted individuals or such projects end up targeting only the rich instead of the poor (Kabeer 2002). Overall, the general consensus in the literature is that where a social protection scheme exists and is well implemented it can provide households with resilience against negative outcomes (such as income failure).

2.1.7 Farm/Non-farm linkages

Farm/non-farm linkages – is a concept used to explain the relationship between farm and non-farm sectors in the rural economy. When agriculture productivity grows, rural household income increases and the additional household demand caused by agricultural expansion has a very high multiplier effect across the rest of the economy, particularly in closed economies, which is in practice the case of many developing rural economies due to high transaction costs (Anriquez and Daidone 2008). The notion of farm/non-farm linkages seeks to find out whether expansion of one sector is hindering the existence or performance of the other sector by competing for scarce inputs and capital.

Links between farm and non-farm sectors differ according to place and time, are dynamic and interactive and may extend in any direction (Kusters 2010). The literature identifies forward and backward relationships in production, expenditure and investment linkages between rural farm and non-farm activities (FAO 1998, Haggblade *et al.* 2002, Barrett *et al.* 2001, IFAD 2009b). Backward linkages refer to movement from the farm sector to the non-farm sector that provides inputs for agricultural production. Forward linkages refer to the activities which involve non-farm sector that uses agricultural output as input. They may also be substituting each other, which suggest that growth in one sector would lead to a (relative) decline in the other (Kusters 2010).

The expenditure linkages occur when income obtained from one of the two sectors is used to purchase the outputs of the other. It has been shown that growth in farm incomes provides the links for the expansion of rural non-farm activities by creating demand for non-farm products (Haggblade *et al.* 2002). The underlining principle is that growth in the non-farm sector induces the expansion of expenditure on farm output. Investment linkages describe the relationship which exists where investment of capital generated in one of the sectors is used in the expansion of the other (IFAD 2009b). Some authors maintain that this is an important link in rural areas, where access to financial capital is hindered by poor access to financial services. Without start-up funds, or with little cash available for investment, households are limited to a smaller number of activities that yield poor returns (Fabusoro *et al.* 2010).

The literature shows that products of rural non-farm activities are inferior in quality and tend to diminish in importance with rising household income. Rural people tend to spend their higher or new income on superior goods and services, modern and higher technology that are usually urban by-products. The assumption that rural products and services tend to diminish

in importance with rising rural incomes appears to have focused on non-farm production activities that take place in the rural sector (IFAD 2009b). This to some extent does not apply to most African countries because the majority of rural agricultural activities are small scale and people are unable to expand their incomes from farming alone (ibid).

If the rural economy is to be sustainable, it is important that both farm and non-farm sectors interact and support each other in order to increase income activities. There are two strong opposite views as to the most important sector in the rural economy in the literature. Some authors regard agriculture as the primary source of growth (Collier and Gunning 1997), while others suggest that non-farm sector have the potential to contribute to growth and rural development (Haggblade *et al.* 2002, Reardon *et al.* 2007, Kusters 2010). Despite the two different views, the majority of literature shows that rural households in developing countries are finding it difficult to engage profitably in agriculture and have been diversifying into non-farm activities (IFAD 2009b, 2011 & 2012). This accounts for the high rate of poverty in rural communities that solely depend on agriculture as primary sources of livelihood.

There is growing evidence in developing nations that the rural sector is much more than just agriculture (Escobal 2005). The non-farm sector in developing countries is generally assumed to be growing in importance over time, while the relative importance of farming is thought to be decreasing (Kusters 2010). Several authors have identified this process in different ways. Bryceson (1996) describe this as a process of ‘deagrarianisation’, while Bouahom *et al.* (2004) called it ‘depeasantisation’ for the same process and a consequence of this process is that access to land is no longer a precondition for poverty alleviation (Kusters 2010: 321).

Most African rural communities have been developing into less agrarian and participating in a wide range of non-farm activities, such as wage employment, self-employment, manufacturing and services (ibid). Therefore, ‘deagrarianisation’ describes the livelihood process whereby rural populations steadily become less and less agrarian as they increasingly depend on non-farm income. This is the case with most rural communities; as most studies show that non-farm income now contribute more than half the share of household income.

2.1.8 Pathways out of rural poverty

It is widely reported in the literature that poverty rates are highest in rural areas of developing economies. It is certain that the main occupation of these rural populations is farming. Literature shows that farming alone, has failed to lift rural households out of poverty. Some

authors recognises that the most effective way of increasing income and reducing poverty will be to increase the productivity of the resources which people depend on for their income and livelihood. These resources are agriculture and non-farm activities.

Sen (1999) showed that during years when non-agricultural rural employment increases, rural poverty declines, and off-farm rural employment is crucial to reducing rural poverty and to secure adequate livelihood within the households of smallholders and landless agricultural labourers. IFAD (2011) maintain that income from non-farm sector assists the small-farm households to become hunger-free and that through effectively-managed ‘monetisation’ small farm households could benefit from globalisation and avoid poverty.

There are still many strong views in the literature that the only way to improve household income and reduce poverty in rural areas in developing economies is through agricultural development (WDR 1993, Collier & Dercon 2009, Obike *et al.* 2011). There are many reported stories of agriculture as a foundation of growth early in the development process and of agriculture as a major force for poverty reduction through green revolution. For example, China’s rapid growth in agriculture – due to the household responsibility system, the liberalization of markets, and rapid technological change – has been largely responsible for the decline in rural poverty from 53% in 1981 to 8% in 2001 (World Bank 2008).

Montalvo and Ravallion (2009) found that the primary sector rather than the secondary (manufacturing) or tertiary sectors was the main driving force in China’s thriving success against absolute poverty. They conclude that the idea of a trade-off between these activities in terms of overall progress against poverty in China is moot, given how little evidence they found of any poverty impact of non-primary sector growth. Agricultural growth was the precursor to the acceleration of industrial growth, very much in the way agricultural revolutions predated the industrial revolutions that spread across the temperate nations from England in the mid-18th century to Japan in the late 19th century (World Bank 2008).

Christiaensen and Demery (2007) in their study of agriculture and poverty in Africa find that growth originating in agriculture is on average significantly more poverty reducing than growth originating outside agriculture. While explaining measures for achieving growth and food security, the World Bank report (2008: 19) states that Sub-Saharan countries account for over 80 percent of the rural population in the agricultural-based countries. For them, with both limited tradability of food and comparative advantage in primary subsectors, agricultural productivity gains must be the basis for national economic growth and the instrument for

mass poverty reduction and food security, concludes the report. In Nigeria, agriculture provides the most employment opportunities and majority of rural households depends entirely on farming for food and their survival. Therefore productive gains in the farm sector are pre-condition for self-sustaining economic development (Obike *et al.* 2011).

Most Nigerian farming households, who are the backbone of the Nigeria economy, are peasant and poorly equipped in terms of resources and income, but these subsistence farmers account for up to 95% or more of food produced for consumption in the country (Obike *et al.* 2011). That the rate of poverty among rural agricultural households is persistently much higher is confirmed by the micro evidence from numerous country poverty studies by the World Bank, UNDP, DFID, UNECA, IFAD, ADB and FAO. Many countries that had fairly high agricultural growth rates maintained substantial reduction in rural poverty: Vietnam, with land reforms, trade and price liberalization; Bangladesh, with rising rural farm and non-farm earnings and lower rice prices resulting from modern technologies; and Uganda, with economic reforms and a resulting boom in coffee production (World Bank 2008).

“Agriculture was also the key to China’s massive reduction in rural poverty and to India’s slower but still substantial long-term decline. Ghana is sub-Saharan Africa’s breaking story of poverty reduction over 15 years, with a decline in rural poverty as the largest contributor. An estimated 59% of Ghana’s total poverty reduction was due to declining rural poverty. Productivity growth in developing countries drove agriculture’s global success. Better technology and better policy have been major sources of growth” (ibid: 47).

The World Bank report showed that for the poorest households, non-farm income and agricultural wages typically account for a larger share of household income, ranging from 77% in Ghana to 59% in Guatemala, than for richer households. Also in Asia, Latin America and some countries in Africa (Malawi and Nigeria), agricultural income are more important for low-income than for high-income households (World Bank 2008).

Some studies suggest that poverty reducing powers of agriculture decline as countries grow or get richer (Christiaensen and Demery 2007, Ligon and Sadoulet 2008). Ravallion and Chen (2007) estimate that agricultural growth had four times greater influence on poverty reduction than growth in the secondary and tertiary sectors in rural China communities. Agricultural sector growth is believed to be a more important driver of overall growth in countries where its sector share is large (Cervantes-Godoy and Dewbre 2010). As such, it has been suggested that perhaps growth in per capita income in most developing countries is

itself driven by growth in agricultural wages (Cervantes-Godoy and Dewbre 2010, Irz and Tiffin 2006). It has been stated that agricultural sector growth exhibits a higher multiplier than growth in other non-agricultural sectors (Bresciani and Valdes 2007).

Several studies on economic growth and poverty reduction have shown that the most effective way to reduce poverty sustainably is to raise the productivity of and returns to farm and non-farm resources that poor people depend on for their livelihood. According to AU/UNECA (2008), in almost all African countries, these resources are agricultural land and labour since African countries with higher agricultural growth exhibit lower poverty rates.

“For most African countries, there is evidence that a \$1.00 (US dollar) increase in farm income results in an additional increase in rural incomes from US\$1.5 to \$2.5. The importance of agriculture increases even more when one considers the very strong interrelationships between agricultural growth and the broader socioeconomic and human development goals. It is now well understood that poor agricultural growth is highly correlated with the prevalence of hunger and malnutrition” (ibid: 7).

But what influences agricultural or economic growth? There is widespread agreement on a general list of necessary factors; access to output and input markets accommodated by a good transportation, marketing, processing and infrastructure; non-discriminatory tax and trade policy; high rates of investment in agricultural research and extension; a system of ownership rights that encourages initiative; employment creating non-farm growth; well-functioning institutions; good governance, etc (Cervantes-Godoy and Dewbre 2010).

The links between agriculture and poverty reduction have been described by Cervantes-Godoy and Dewbre (2010) as being forged through four transmission mechanisms: direct impact of improved agricultural performance on rural household income; impact of cheaper food for both urban and rural poor households; the generation of economic opportunity in the farm and non-farm activities; and agriculture’s fundamental role in stimulating economic transition, as countries (and poor rural households) shift away from being primarily agricultural production towards a broader base of manufacturing and services.

Bresciani and Valdes (2007) provide a typical analysis based on the three key channels they believe link agricultural growth to poverty: labour market, farm income, and food prices. Their findings from six countries suggest that when both the direct and indirect effects of agricultural growth are taken into account, such growth is more poverty reducing than growth

in non-agricultural sector. Several studies suggest that agricultural income growth is more effective in reducing poverty than growth in non-farm sector because of two reasons: the incidence of poverty tends to be higher in agricultural/rural communities than elsewhere; and most of the poor live in rural areas and a large percentage of them depend on farming for a living (World Bank 2008, Christiaensen and Demery 2007, Ravallion and Chen 2007).

Another source of non-farm income activities known to be especially effective in reducing poverty is remittances from migrated household members (Acosta, Fajnzylber and Lopez 2007). Through migration of farm workers to off-farm jobs, either in rural or urban areas, poverty could be reduced even in the absence of economic growth (Cervantes-Godoy and Dewbre 2010). In rural communities, youths and educated household member tend to migrate to seek for higher paying non-farm employment in nearby villages/towns or distance cities.

Christiaensen and Todo (2008) observe that there are two phases as nations develop as: their economies restructure away from agriculture into manufacturing and services; and people move from rural to urban communities. The authors find that migration from farm to non-farm work in rural areas is poverty reducing but not migration from farm to non-farm jobs in urban areas. Byerlee *et al.* (2009) findings show that migration from rural to urban areas accounted for less than 20 percent of the overall reduction in rural poverty during 1993 – 2002 and improvements in economic conditions in rural communities, while agriculture and infrastructure accounted for 80 percent.

African Heads of States and Government in endorsing the AU/NEPAD agenda in 2007 underlined the crucial role agriculture will play in driving the continent's socio-economic development and growth agenda, food security and poverty alleviation. African governments aim to eliminate hunger and reduce poverty through agriculture and its aims include:

- Dynamic agricultural markets within and between countries and regions in Africa;
- Farmers being active in the market economy and the continent becoming a net exporter of agricultural products;
- A more equitable distribution of wealth for rural households;
- Africa as a strategic player in agricultural science and industrial technology; and
- Environmentally sound agricultural production and a culture of sustainable management of natural resources in African communities.

Source: NEPAD Report (2008)

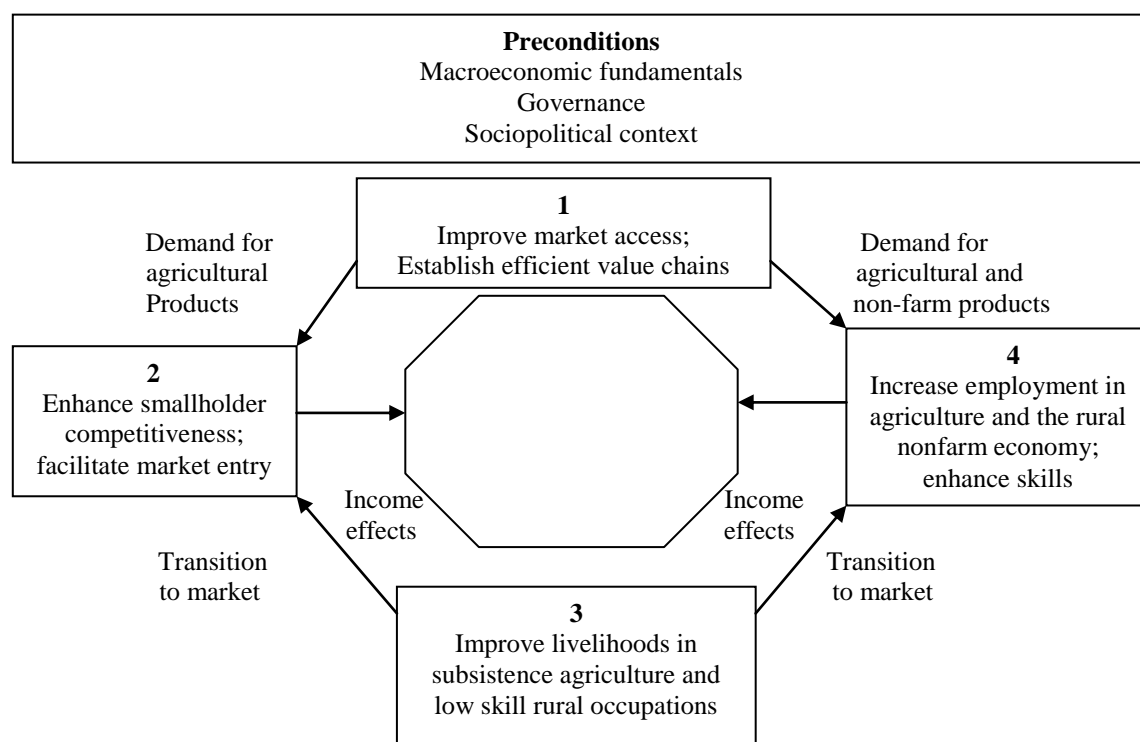
These are macro-economic instruments aimed at promoting agriculture as a means of livelihood among rural households in Africa in order to reduce income inequality and poverty. In defining the agriculture-for-development agenda and opening and widening pathways out of poverty, World Bank (2008) outlines the following conditions:

- Rural households pursue numerous farm and non-farm activities that allow them to capitalise on the different skills of individual members and to diversify risks. Pathways out of poverty can be through casual, wage or self-employment in the rural non-farm economy, smallholder farming, and migration out of rural areas – or some combination thereof. Gender differences in access to assets and mobility constraints are important determinants of available pathways to escape poverty.
- Making agriculture more effective in supporting sustainable growth and reducing poverty starts with a favourable socio-political climate, adequate governance, and sound macroeconomic policies.

Source: World Bank (2008)

The report maintains that this process requires defining an agenda for each country type, based on a combination of four policy objectives – forming a policy diamond (Figure 2.2).

Figure 2.2 Agriculture-for-development agenda (The Four policy objectives)



Source: World Bank (2008: 19).

2.2 The determinants of household income

The rural sector performs a significant function in providing employment for households in the rural villages. It starts with the population wholly depending on agriculture but as the population grows in the land-scarce areas, growth in agricultural production cannot absorb the increasing rural labour force in agricultural employment (IFAD 2009b). At the same time, the urban sector cannot grow fast enough to absorb the surplus rural labour released from agriculture (ibid: 1). IFAD conclude that as a result, non-farm sector develops to absorb labour released from agriculture but not absorbed in the urban sector. For this reason, rural non-farm activities (casual, regular wage and self-employment) becomes a very important source of household income and, therefore, as a central factor in rural poverty reduction.

This study argues that there is need for micro-economic analysis to take account of rural people's way of living, in order to better understand why some people are able to pursue their livelihoods targets and what prevents others from doing so. Rural livelihood studies need to take into account the heterogeneous, diversity and complexity of the rural activities. It is evident from the literature that a strategy for medium/large scale farming or industrial production would support a kind of non-farm activity that may be different from that of the small-scale agriculture practiced in most rural farming communities. Review of literature reveals the factors and determinants of income considered important to this study. These factors are land, education, access to infrastructure, capital, household labour force, age of head of household and ownership of non-farm enterprises (presented in Section 2.2.1 – 2.2.6).

2.2.1 Land as a factor of production

Land is a major asset for the rural and urban poor and as such it provides a foundation for economic activity and the functioning of market (credit) and non-market institutions (local governments and social networks) in many developing nations (Deininger 2003). Lack of access to productive assets and resources (mainly land) has been suggested as a major barrier to raising household's income in many developing economies (Hossain and Sen 1992, IFAD 2009c). According to Onyeiwu and Liu (2011), what is unclear, is the types of assets important for households in Africa rural communities. The authors state that identification of crucial rural assets would enable policy makers to invest in the appropriate assets and capabilities, and thus avoid targeting assets that are ineffective in alleviating poverty.

Land policies are of fundamental importance to sustainable growth, good governance and the well-being of poor households according to Deininger (2003). Three attributes of land stated by Deininger (2003) are: “First, providing secure tenure to land can improve the welfare of the poor, by enhancing the asset base of vulnerable groups, such as women, whose land rights are often neglected. Second, facilitating the exchange and distribution of land, at low cost, through markets as well as through non-market channels, is central to expediting land access by productive but land-poor producers and the development of financial markets that rely on the use of land as collateral. The removal of impediments to rental market transactions can help generate considerable equity advantages and at the same time establish the basis for a positive investment climate and the diversification of economic activity, especially in the rural non-farm sector. Third, governments have a clear role to play in promoting and contributing to socially desirable land allocation and utilisation” (ibid: x).

Land is a key determinant of household income in most rural farming communities. For instance, in Uganda land constitutes between 50 – 60% of the asset base of poor households (Deininger 2003). The author state that because land comprises a large share of the asset portfolio of the poor in many developing countries, giving secure property rights to land which people already possess can greatly increase the average income of poor households. Onyeiwu and Liu (2011), note that in rural areas with excess labour supply, land is a major asset that determines household income. Therefore, land ownership, size, and quality constitute a major source of inequality in rural communities of developing countries (ibid: 4). These authors attributed the high rates of rural poverty in parts of East and Southern Africa to the concentration of landholdings in a few hands. It has been suggested that by allowing people to make productive use of their labour, land ownership makes people less reliant on wage labour, thereby reducing people’s vulnerability to shocks and stress (Deininger 2003).

Access to land is an important factor in agricultural productivity growth (especially crop production). In rural communities, participation in crop farming and livestock are crucial to meeting consumption and income needs of households. Crop production dominates Nigerian rural agriculture, accounting for more than 70% of agricultural value addition (NBS 2007). In most cases, crop farming is carried out on a subsistence scale while livestock farming is carried out as small free range animals kept at home or in confined areas near family homes. Onyeiwu and Liu (2011) noted that livestock ownership is not a major source of household income in the rural Nigerian communities. They maintained that irrigated agriculture and non-farm income from self-employment are the main source of income for the wealthy group.

While livestock is not a major source of household income, the authors suggest that it is both a tool for seasonal work and security, as well as a short and medium-term insurance for income security. It was discovered that rural farmers in Nigeria never leave farming even if they make very high income from non-farm employment activities.

“We cannot leave farming. If we can’t have enough money to spend, we should be able to have food to eat. This is what farming does for us. At least we’ll be able to feed our family” was a comment by one farmer in Ogun State, Nigeria (Fabusoro *et al.* 2010: 428).

Other reasons provided by Fabusoro *et al.* (2010) on why people continue to engage in farming, despite high participation in non-farm activities, include the relatively high cost of purchased food, severe reduction in government social welfare schemes and declining value of ex-migrant workers’ pensions which make family farming a vital shelter and household’s attachment to the cultural or traditional values of the occupations of their ancestors.

Onyeiwu and Liu (2011) make a distinction between factors that reduce households’ risk of being trapped in poverty and those that help households escape from the poverty trap. They maintain that ownership of ‘rural-origin’ material assets such as agricultural land can prevent a household from falling into poverty. On the other hand, these authors suggest that agricultural land also fails to lift people out of poverty. They maintain that the key to alleviating rural poverty is whether the community is close to a city/urban or not.

Several authors have shown that land ownership and farm size are significantly correlated with household income (Hossain *et al.* 1990, Hossain and Sen 1992, Fabusoro *et al.* 2010, Onyeiwu and Liu 2011). Onyeiwu and Liu (2011) argued that the value and size of land owned are both important for explaining difference in income amongst households in rural Nigerian communities. For most of the poor in developing nations, land is the primary means for generating a livelihood and a main channel for investing, accumulating wealth, and transferring it between generations (Deininger 2003).

It is also believed by many researchers that small farm size or land fragmentation is the main reason behind low household income and poverty in rural farming communities (World Bank 2000, Mehrota and Delamonica 2007, Fabusoro *et al.* 2010). Also, landlessness is the main reason why people are seeking non-farm employment in order to supplement or increase

household income (IFAD 2009b). For example, households with less than 0.5 hectares earn between 30 percent and 90 percent of their income from non-farm activities (ibid: 3).

2.2.2 Access to Infrastructure

Rural poverty is associated with the exposure of households to economic uncertainties which results from under-performance of the rural sector (especially farming). To improve the profitability and competitiveness of the rural sector will require improvement and investment in public infrastructure such as roads, schools, hospitals, electricity and water. Availability of infrastructure increases access to the market, as well as promoting urban-rural interaction which influences economic activities and well-being of rural people in different locations.

The African leaders of the New Partnership for Africa's Development (NEPAD) have indicated that adequate and well-functioning infrastructure is crucial for agriculture to be competitive, due to reduced costs of delivering inputs to it and of taking produce out to markets, including any storage that this may entail. The organisation believes that energy infrastructure is essential for development of agro-industries; information infrastructure is vital for timely technological information to farmers and agro-industrialists but also between producers and markets; water infrastructure is a precondition for irrigation, and water-based power generation is the key to adequate and affordable power for Africa (NEPAD 2002).

Lack of good rural roads in developing countries hinders the distribution and marketing of agricultural commodities, prevents farmers from selling their produce at reasonable prices, and leads to spoilage (Reardon 2001). Poor rural access (especially road) cuts small-scale farmers off from sources of inputs, equipment and new technology and this keeps yields low (Ayogu 2007). Lack of basic infrastructure limits the emergence and development of small and medium scale local businesses and industries. The provision of basic infrastructure is essential for enabling African countries to stimulate economic development, growth and poverty alleviation by 2015, which could be achieved through increasing and diversifying agricultural output and employment, promoting domestic market activity and market integration, and facilitating and developing access to export markets (NEPAD 2002).

Several authors maintain that a rural sector with well-developed infrastructure will support a range of activities that may be different from that with a poorly developed infrastructure. Access to markets and nearness to urban communities are important attributes that promote income activities in rural villages. Some authors suggest that the key to rural poverty

reduction is not based on assets people own, but on the level of infrastructure, as well as, closeness to a city (Dorosh *et al.* 2010, Khander & Koolwall 2010, Krishna & Shariff 2011).

The literature argues that nearness to an urban centre is important because it enables rural households to have access to electricity, good roads and transportation, thereby increasing their income. Onyeiwu and Liu (2011) show that in Bangladesh, a 1% increase in households with electricity in the village leads to 0.8% increase in total per capita income. They also reveal that access to paved roads results in 33% increase in total per capita income. Similarly, households residing in villages located fewer than 5 km from the nearest city have significantly higher odds of breaking out of poverty (ibid: 2). Some authors believe that providing rural infrastructure ahead of social overhead capital would foster growth of the rural economy, as well as providing employment opportunities, thereby reducing the main barrier to rural poverty (Reardon 2001, Ayogu 2007).

The relationship between infrastructure and economic growth is a major focus of development literature (Ayogu 2007). Several authors have suggested that spending on infrastructure is one of the most powerful mechanisms that can be used to promote productivity, economic development, growth and poverty reduction (Estache *et al.* 2002, Dorward *et al.* 2004, World Bank 1994, 2003, 2006, 2010, DFID 2011 & 2012). These studies support the idea that under the right conditions, infrastructure development can play a major role in promoting economic growth, rural development and poverty reduction.

Slow growth is the principal reason for Sub-Saharan Africa and South Asia regions being off target to achieve the Millennium Development Goal (MDG 1) target of halving poverty by 2015 (DFID 2011). The literature shows quite strong evidence that infrastructure can stimulate an increase in output and economic growth. Dercon *et al.* (2008) used instrumental factors to show that access to all-weather roads reduces poverty by 6.9% and increases consumption growth by 16.3% in Ethiopia. Dorosh *et al.* (2010) showed that agricultural output was far higher in areas with a shorter travel time to city markets, suggesting that infrastructure improvements which reduced travel time really made a difference to overall output. The authors find that agricultural production is highly correlated with proximity (as measured by travel time) to urban markets. Likewise, adoption of high-productive/high-input technology is negatively correlated with travel time to urban areas (Dorosh *et al.* 2010).

Baum-Snow *et al.* (2012) show that transport links in Chinese cities stimulated changes in the land use in and around those cities, allowing much bigger cities than otherwise. Sahoo *et al.*

(2012), Sahoo and Dash (2012) used a lot of data in China and other parts of Asia and found quite significant association developing from infrastructure to output gains. Overall, their findings reveal that infrastructure capital, labour force, public and private investment play crucial roles in economic development and growth in China. The studies maintain that infrastructure advancement in China has a greater positive contribution to growth than both private and public investment.

Ren and de Walle (2011) assess the impacts of rural road rehabilitation on market development in rural Vietnam communities at micro level. The authors base their research on analysis of rural road rehabilitation on market development at the commune level and examine the geographic, community and household interacting variable of impact. Their findings point to significant average impacts on the development of local markets. Ren and De Walle (2011) suggest that investment in infrastructure in rural areas is often a pre-condition for economic growth or increase household income, not a consequence of it.

DFID (2011) note that the most effective means to alleviate poverty is through sustained economic growth and creating the environment for the private sector to create jobs and to raise household income (from farms to firms). According to Dorosh *et al.* (2010), there is substantial scope for increasing agricultural production in Sub-Saharan Africa, particularly in more remote locations. The authors conclude that low population densities and long travel times to urban centres sharply constrain production and that reducing transport costs and travel times to rural areas would expand the feasible market size for Sub-Saharan African region. Ayogu (2007) maintains that infrastructure policy is about the decision to build, what to build, where to build, how to build, how to finance, how to recover the investment, how to management it, how to evaluate performance and the problem of the right mix of bundles of infrastructure facilities.

There is evidence from the literature suggesting that poor infrastructure hinders Africa's growth and development in numerous ways (Estache and Vagliasindi 2007, Calderon and Serven 2008). Calderon and Serven (2008) show that growth in the agricultural sector is constrained by high marketing costs, which largely reflect poor transport facilities (as well as other infrastructure). The bulk of the empirical literature on the effects of infrastructure has focused on its long-term contribution to the growth rate of aggregate income and productivity (for example, insufficient power generation capacity limits growth in Ghana) (ibid: 5).

Several authors analysed the effects of infrastructure on income inequality and poverty in different regions (Calderon and Serven 2008). Their findings are that infrastructure provision may have a disproportionate effect on the livelihood of the poor by raising the value of the asset they hold, or by lowering the transaction cost (for example, transport and logistics) they incur to access the market for their production input and output.

On the other hand, some literature focuses on the effects of income inequality caused by poor specific infrastructure. The conclusions show that public investment in infrastructure, specifically in the rehabilitation of rural road – improves local community and market development (Calderon and Serven 2008). For example, rehabilitation of rural roads was a major factor in raising male agricultural wages and aggregate crop indices in poor villages of Bangladesh (ibid: 6). Similarly, the authors showed that some studies on the effect of infrastructure in Vietnam revealed that it led to an increase in the availability of food, the completion rates of primary school and the wages of agricultural workers. Other studies find that access to improved roads in rural areas promotes opportunities in non-farm activities in Peru and in non-farm activities among women in Georgia (Calderon and Serven 2008).

Other empirical studies have focused on the impact of infrastructure on inequality at the macro-economic level. Fan and Zhang (2004) showed that because the rural non-farm sector is a major determinant of household income in China, investing more in infrastructure is key to an increase in overall income of rural population. In both studies, the finding is that, other things being equal, infrastructure development is significantly correlated with reduced income inequality. Calderon and Serven (2008) maintain that combined with the evidence from the literature that infrastructure also tends to raise growth, the consequence is that, in the right conditions, infrastructure development can be a powerful tool for poverty reduction.

The African leaders of the New Partnership for Africa's Development (NEPAD 2002) recognises that the lack of adequate and reliable infrastructure touches the life of every rural African households; investments in rural infrastructure, particularly rural roads, storage, processing and market facilities, will therefore be required to support the anticipated growth in agricultural production and improve competitiveness of the rural sector. NEPAD stress that African rural infrastructure is generally inadequate by almost any standard.

2.2.3 Education

There has been much academic debate on the role of education in economic development, growth and poverty reduction. Much of the interest focuses on examining the extent to which education affects production patterns in informal household-based activities which dominate the rural sector. Overall, the literature shows that education helps to increase the productivity of subsistence farmers, particularly when they have access to the other inputs and technology needed to enhance their production. For instance, Appleton (1997) states that each year of primary schooling in Uganda led to 2.5 percent fall in the risk of poverty, and that lower secondary schooling has roughly twice this effect on households. Overall, the effects of education on the probability of being poor were found to be very strong (Oxaal 1997).

Education is an important factor for participation into the higher livelihood income activities. Education and poverty are linked in two ways: investment in education as a poverty reduction strategy can enhance the skills and productivity among poor households; poverty becomes a constraint to educational achievement both at the macro-level (poor nations generally have lower levels of enrolment) and the micro-level (children of poor households receive less education) (Oxaal 1997). According to World Bank (2008), while land and water are critical assets in rural areas, education is often the most valuable asset for rural people to pursue opportunities in the new agriculture, obtain skilled jobs, start businesses in the rural non-farm sector and migrate successfully.

The literature shows that the earnings of the self-employed, including those in urban and informal rural activities, are higher for the educated than for the uneducated (for example, Oxaal 1997). Aikaeli (2010) states that education lead to proficient household management and crucially, improves economic performance of the household as a whole. Furthermore, it has been demonstrated that increasing the schooling of women brings beneficial effects for their own control of fertility, for their own health, and that of their households (Oxaal 1997).

There are several mechanisms by which education can be critical for poverty reduction in rural Africa. According to Onyeiwu and Liu (2011) these mechanisms are: “First, educated members of rural household are more likely to secure wage employment in the non-farm sector than in the farm sector; this helps increase household income and sometimes this new income helps lift the entire household from abject poverty. Second, formal education equips people with skills which enable households to better manage their assets, resources and

investment. Third, rural households could use investment in the education of some members as an insurance policy against risks and uncertainty associated with farming”.

Tadaro (1989) suggests that the expansion of educational opportunities at all levels has contributed to aggregate economic growth through four mechanisms: (i) creating a more productive human capital and endowing it with increased knowledge and skills; (ii) providing wide range of employment and income-earning opportunities across sectors; (iii) creating a group of educated people to fill positions created in governmental, public and private institutions; and (iv) offering the kind of training and education that would promote higher literacy and basic skills among the population.

Education plays an important role in influencing rural-urban migration. Numerous studies on migration in diverse countries have documented the positive relationship between the educational attainment for an individual and his or her ability to migrate from rural to urban areas (Todaro and Smith 2003). These authors found ample evidence of significant relationship between education and the access and or return to non-farm employment.

Several authors show that in China and India better education enables rural people to find high-paying non-farm employment, whereas lack of education tends to push them into agricultural employment or low-income non-farm employment (Du, Park and Wang 2005, Kashisa and Palanichamy 2006). In the Philippines and Thailand, rural households invest a substantial portion of their household earnings in schooling of their children who later engage in rural non-farm jobs or migrate to cities to seek higher paying urban employment (Quisumbing *et al.* 2004 and Takahashi 2006).

Education is often the most important asset for rural people to pursue opportunities in new business, higher employment and in rural non-farm sector and to migrate (World Bank 2008). Yet education levels in rural communities tend to be dismally low worldwide: an average of four years for rural adult's males and less than three years for rural adult females in Sub-Saharan Africa rural villages (*ibid*: 9). Studies have shown that the quality of human capital is an important factor in explaining rural poverty in Uganda and in Russia (Aikaeli 2010).

There is evidence that education reduces the vulnerability of households. It provides households with capabilities that enhance their ability to deal with economic, as well as policy shocks (Bigsten and Fosu 2004). Despite the importance of education to human development, enrolment rates have stagnated in many African countries and there tends to be

a wide gap between genders (ibid). Several authors have shown that females in developing countries typically receive less education than do males (Oxaal 1997, Bigsten & Fosu 2004). Summarising the literature, the World Bank (2001) maintains that growth improves average health attainments of the populations through its ability to reduce income poverty and permit more pro-poor social spending. A similar causal relationship has been established with income and education levels (ibid).

In their study of poverty in Nigeria, Canagarajah and Thomas (2001) found that education is an important variable in poverty reduction. In 1985 the incidence of poverty was 48% in households in which the head of the household had no education, and only 28% when the household head had secondary education (ibid: 164). Therefore, lack of education is a crucial factor that stimulates poverty. Moser and Ichida (2001) have shown that decline in illiteracy rates seems to be closely correlated to improvements in income levels and growth rates.

Education increases incomes; this in turn increases capital that could be applied towards increasing income activities. Several studies have shown that the quality of human capital is an important factor in explaining rural poverty in several regions. Based on the findings from studies in Uganda and Russia, Aikaeli (2010) maintain that education allows people to adapt more easily to both social and technical changes in the economy and, to changes in the demand for labour. The importance of education as a factor in the uptake of non-farm employment is supported by Fabusoro *et al.* (2010) who state that education increases skills and training processes that increases confidence, establish useful network, and stimulates entrepreneurial activity and enhances productivity.

The majority of the literature on the debate on the inter-relationship between education, economic growth and inequality emphasises that investment in education is a pre-condition to achieving economic growth and helping poorer households escape poverty, and it is also important instrument for entrepreneurial/SMEs development. The direction of the linkages between poverty and education has been shown to flow both ways. On one hand, poverty acts as a factor hindering people from getting access to education and on the other hand, those with access to education are considered to be at less risk of poverty (Oxaal 1997).

2.2.4 Financial capital

Financial capital is held in various asset forms – cash savings, storage of farm produce, livestock, non-farm businesses, land and many other resources. The literature shows that

own-cash sources of household income are important determinants of capacity to start non-farm businesses or to obtain wage employment. For example, Fabusoro *et al.* (2010), maintain that one of the principal problems of rural households and individuals wishing to start a business, whether in the farm or non-farm sector, is access to financial capital. These authors conclude that, without start-up funds, or with little cash available for investment, households are limited to a smaller number of activities that typically yield poorer returns.

It has been suggested that financial services to low income entrepreneurs and producers may well be the single most effective means to tackle poverty (Mishra 2002). In recognition of the importance of financial capital in promotion of entrepreneurial growth and poverty reduction, many governments and development agencies have set up several projects for direct financial assistance. For example, in Nigeria, the Central Bank of Nigeria has also licensed about 850 micro-finance banks but the majority of these banks operate in the cities or urban areas. The World Bank (2008) note that financial contracts in rural areas involve higher transaction costs and risks than those in the urban settings because of the greater spatial dispersion of production, lower population densities, the generally lower quality of infrastructure, and seasonality and often high covariance of rural production activities.

Micro-finance refers to provision of a broad range of financial services such as deposits, loans, grants, money transfers, and insurance to poor and low-income households and their business activities (ADB 2000). Rural households and their enterprises (small-scale farming, trading, agro-processing, transportation, manufacturing and mining, services, etc) need access to financial services, including credit and savings products, through micro-financing.

These rural enterprises, which are mainly agriculture-based, are faced with unique problems that affect their growth and thus reduce their capacity to contribute effectively to economic development (IFAD 2012). One of the major problems is lack of access to credit. Availability of financial capital has been identified in many studies as the most important variable determining the growth and survival of SMEs in both developing and developed countries.

It is evident that of the 1.2 billion people living in extreme poverty, in developing nations, about 75 percent lives in rural communities (Wermer 2010). However, the rural areas where the majority of the poor live in developing nations lack access to basic financial services which are essential for people to generate livelihood income. Financial capital is required for good management of assets and resources which can be crucial to very poor households in order to meet their income and food needs. In order to create jobs and sustain incomes,

households need to be able to borrow, save and invest, and to protect their investments against uncertainties. But with little education, small-scale of enterprises and lack of collateral, local people are excluded from obtaining loans from formal financial institutions.

Microfinance is one way of increasing household income and promoting poverty reduction since it puts credit, savings, insurance and other basic financial services within the reach of poor local people. Through microfinance poor people access small loans, receive remittances from migrant relatives and expand or maintain their income activities and investments. It has proven to be difficult to provide accessible microfinance services to remote rural locations in developing nations. Most of the financial services in African countries centre on the urban areas and cities and they are unable to reach the rural households. This leads to the growth of the informal financial sector in the rural areas providing small-scale loans and credits.

The informal financial sector, comprising money lenders and thrift associations, receives wide patronage because of the accessibility and flexibility of services, but the loans are usually short term since the scale of operation of the average individual lender is small (Attah 2008). For example, of the over 140 million Nigerians (2006 census), the formal financial sector provides services to only about 35% of the economically active population while the remaining 65% are excluded from financial services (Juma 2007). Faced with the situation of discrimination against peasant farmers in terms of credit in most developing countries, credit guarantee programmes were implemented throughout the 20th century as a way of promoting private sector-led growth and development (Attah 2008).

Financial exclusion refers to a condition where the poor and other disadvantaged groups are unable to access formal financial services, owing to their perceived vulnerability (Juma 2007). The rural reality: few households and small businesses can meet their need for credit and other financial services according to the World Bank. In a recent survey of 6,000 households in two Indian States, results showed that 87 percent of the marginal farmers surveyed had no access to formal credit, and 71 percent had no access to a savings account in a formal financial institution (World Bank 2008). As a result, households have traditionally patronized informal credit lenders some of whom charge higher interest rates and give short-term small loans. The World Bank (2008) maintain that informal financial arrangements serve rural communities, but they tend to fragment along lines of household location, asset ownership, or membership in kin – or ethnic – based networks, all affecting the transaction costs of contracting, the size of the possible transactions, and the rate of interest charged.

“Finance is essential in the commodity-dominated rural world and determines people’s ability to invest in farm or non-farm activities. There are two sides in the financing of the commodity: (i) the demand side, with strategies for processors, producers and traders; and (ii) the supply side, with strategies for financial institutions. Closing the supply and demand gap is a daunting task, but not impossible. The two issues are crucial in combating poverty in a sustainable way: (i) on the demand side, a move is necessary from a sole emphasis on commodity production towards value creation through processing and marketing goods that respond to market pull; (ii) on the supply side, there has to be a shift away from charity and interest rate subsidies towards dynamically growing and sustainable financial services on commercial terms” (Attah 2008: 25).

Current debate in the literature on entrepreneurship centres on the role of financial capital in the start-up, survival, failure and closure of businesses (Liedholm and Mead 1999, Mishra 2002, Fabusoro *et al.* 2010). In the rural areas where there is less access to credit, the capacity to invest and manage income activities is primarily dependent upon capital accumulation from personal savings and assets. In communities where agriculture is the primary activity, financial capital often represents farm capital (savings), which are resources available to households for production or for diversification, expansion and further investment.

Financial constraints are more pervasive in agriculture and related activities than in many other sectors, reflecting both the nature of agricultural sector and the average size of firms (World Bank 2008). Fabusoro *et al.* (2010) found that capital availability was a significant factor in the extent of diversification among rural people. They suggested that the significance of capital sources to livelihood diversification implies that availability of alternative sources of income will enhance an individual’s capacity towards uptake of non-farm activities. Adequate financial services enable small entrepreneurs to scale-up operations, adopt modern technology, improve production processes and increase employment capacity.

Barrett *et al.* (2001) state that the fact that ex ante endowment of financial capital, skills, education or market access appear to increase the profitability of participation in higher-return non-farm activities, it must not be misinterpreted as suggesting that all the wealthy people move out of farming. They stated that the key point is that the wealthy have greater freedom to choose among a wider range of activities than the poor. On the other hand, the literature (for example, IFAD 2009 b) shows that the poor have little choice but to diversify out of farming into non-farm employment due to limited resources. For instance, lack of

financial capital is one of the factors why agricultural productivity has been on the decline, since it requires higher capital investment than non-agricultural activities. Also, lack of capital drives people to seek non-farm income in the form of self-employment, and/or off-farm and agricultural wage employment.

The provision of financial services has been a long-standing challenge in developing countries, a fact reflected in the general lower penetration of financial services in the rural areas (World Bank 2010). As shown in Table 2.1, small farm size, high levels of transaction and supervisory costs, lack of information on individuals' credit history, insufficient collateral, and uncertainties due in particular to climate and market prices for farmers' produce, among other factors, hinder extending micro-finance services to rural communities.

Table 2.1 Limitations in extending rural micro-financial services

<i>Financiers: The Supply Side</i>	<i>Micro-enterprises: The Demand Side</i>
<ul style="list-style-type: none"> ▪ Small farm size, low population density, higher loan servicing costs due to limited volumes and high information costs. ▪ Lack of collateral or adequate security. ▪ Risk correlation when lending to farms: all borrowers are affected by the same risk, such as low market prices and reduced yield due to weather. ▪ High transaction and supervisory costs due to the particular risk, nature, and characteristics of the rural sector. ▪ No branches or limited network in rural areas, thus difficult to reach farms. ▪ Underdeveloped communication and transportation infrastructure. 	<ul style="list-style-type: none"> ▪ Agribusinesses suffer from poor, insufficient collateral and non-enforceability of security due to lack of land and property rights, high costs, and lengthy or lacking registration and foreclosure processes. ▪ Low affordability for farmers of market interest rates. ▪ Insufficient cash flow planning; farms are not obliged to keep accounts or financial statements; cash flows are hard to assess when clients sell directly to consumers. ▪ Repayment schedules are often difficult for the clients to meet; standard repayment schedules are not adapted to seasonality of the business. ▪ Lack of legal education at the farmers' level. ▪ Lack of initiative and articulated demand for finance by agribusinesses.

Source: World Bank (2005)

The literature reveals that the relative poverty situation of the rural population hampers savings and investment options and this has continued to perpetuate low income and output in the rural sector. Low level of income and lack of formal financial services in the rural areas has considerable impact on households' ability to securing a better livelihood, thereby affecting access to other livelihood opportunities. Several studies have shown that hindered business growth can be attributed to factors such as low productivity, high rates of business failures, and no access to credit (Halkias *et al.* 2011).

There is thus a huge need for financial innovations that can place smallholders on a ladder of ascending financial market access – as well as for innovations that can complement financial services by managing the systemic risks that undercut their supply (World Bank 2008). The rural sector is an important engine for economic development and growth in developing countries. Agriculture and SMEs are critical to that growth. The SMEs are essential for urban and rural linkages, which promote trade, employment and economic growth necessary for the transformation and development of the rural sector.

2.2.5 Household size, labour and age

Household size can have significant influence on household income if it has most of its members working either in farm or non-farm activities. Several authors have stated that a large household is likely to have more diversified income sources if it has some or all of its members working and contributing to household income (Bryceson 2000, Lanjouw 1999, Rahman 1999, Fabusoro *et al.* 2010).

Investigating income distribution in Bangladesh, Rahman (1999) reveal that the major determinant of income is the number of working members in the family. The implication is that a large number of working members in the family leads to a high involvement in non-farm activities (*ibid*). Hossian and Sen (1992) and Reardon (1997) all share the same views on the relevance of having majority of household members working.

In terms of farm income contribution, it is assumed that household with a large number of working adults could contribute to increase farming activities and farm income in the long-run. It is logical to predict that when the majority are working, they can contribute towards raising household income which will increase capital for production and other investment. Aikaeli (2010) maintains that rural household per capita income increases as the size of the household labour force increases (i.e., the proportion of active working household members

aged 15 – 71 years). Statistically, the author found that 1.0 percent increase in the household labour force could increase household per capita income by almost 0.5 percent (ibid: 13).

There are still opposing views to the fact that large family size leads to higher income. Onyeiwu and Liu (2011) suggest from their research that a 1% increase in the proportion of households engaged in farming reduces per capita income by 1.14%. They maintain that with limited land and unlimited labour supply, each household owns a small share of land. The authors suggest that this is one reason why farming remains subsistence in Africa, and that poverty reduction will require more diverse income sources. Overall, the general consensus in the literature is that households with larger numbers of adult working members will contribute to increase productivity of both farm and non-farm sectors.

Another closely related factor is the ‘age distribution’ of household members and heads of households. Age can have a major influence in the type of activities in which people can participate. It has been stated that age in some situations could be a determinant entry factor for some livelihood activities and employment (Gordon and Craig 2001, Fabusoro *et al.* 2010). These authors suggest that young people are more likely to migrate in search of non-farm income opportunities in near or distant towns or urban cities than older people.

2.2.6 Non-farm diversification

Non-farm diversification is now a ‘strategy’ in most rural economies of developing countries. Barrett and Reardon (2000) maintain that very few households earn all their incomes from one activity, hold all their wealth in the form of a single asset or use their assets in just one income source. The literature has shown that diversification has become a major strategy in African rural communities (Ellis 1996, 1999, 2000, Reardon 1997, Reardon *et al.* 1999, Reardon *et al.* 2000 and Fabusoro *et al.* 2010). Most of these studies according to Fabusoro *et al.* (2010), argue that the majority of rural producers have historically diversified their productive activities to encompass a range of other areas.

A review of literature reveals that the non-farm sector has become a very important determinant of rural livelihood in recent years. There is evidence from several surveys suggesting that the subsistence farming system practiced in most African rural sector is no longer sustainable (de Janvry and Sadoulet 2001, IFAD 2002, 2008, 2009 and Fabusoro *et al.* 2010). The non-farm sector accounts for 40-60% of total national employment and rural non-farm sector accounts for 20-50% of total rural employment (IFAD 2002). Already today,

across all of Africa 53% of youth in rural areas are not in agriculture, but engaged in other employments in the non-farm sector and youth in rural non-farm employment are much better off than youth in farming (AEO 2012).

The success of the Green Revolution in raising average household income and reducing poverty by increasing agricultural productivity in many countries is widely acknowledged. Foster and Rosenzweig (2004b) note that a recognition that a single-minded focus on promoting productivity growth in agriculture as a source of welfare improvement is likely to be counterproductive in the context of the global economy. Not only is increased global food productivity likely to result in decreased global prices and lower returns to poor households, but also there are many countries where poor climate or topology provide little opportunity for expansion of agricultural output in the absence of sustained subsidies (ibid).

It is in recognition of these constraints, that the leading international development agencies (World Bank, UNECA, ADB, IFAD and DFID) have increased their focus in recent years on the promotion of the non-farm sector in rural areas as a source of income growth and poverty reduction. Using a 30-year panel of households from a national sample of rural India, Foster and Rosenzweig (2004a, 2004b) show that growth in income from the non-farm sector in rural India has been substantial, and the primary source of this growth, the expansion of rural industry, is not predicated on the expansion of local agricultural productivity. According to Foster and Rosenzweig (2004b), not only do these findings indicate that non-farm growth can play an important role in increasing household income in rural areas but also that non-farm growth is especially pro-poor.

Agriculture alone cannot reduce rural poverty; non-farm employment is also very important. Growth in rural non-farm employment in many cases remains closely linked to growth in agriculture, as agriculture becomes a larger supplier of intermediate inputs to other sectors such as processed foods (forward linkages) (Mishra 2002). Agriculture can influence non-farm activity in at least three ways: through production, through consumption and through labour market linkages (ibid: 21). However, as development proceeds (urbanisation and globalisation); growth in rural non-farm sector occurs increasingly independently from agriculture (WDR 2008). The World Bank therefore proposes that an integrated approach (promoting farm and non-farm sector) will foster a more viable rural sector (ibid: 209).

Several authors maintain that growth in farm and non-farm sectors complement and reinforce each other in raising household income of the rural populations (Reardon 2001, Barrett *et al.*

2001, Reardon *et al.* 2001, Rosenzweig 2004a and 2004b, World Bank 2008, IFAD 2009, 2011, 2012). However, the extent of complementarities and synergies between the activities depends on the nature and density of rural infrastructure and on the strengths of rural-urban linkages (Mwabu and Thorbecke 2004).

World Bank (2008) maintains that evidence from Bangladesh suggests that rural non-farm enterprises do better in areas with good access to markets, infrastructure services and education. Kung and Lee (2001) showed that where non-farm employment opportunities in China have flourished, they do contribute significantly to raising household farm income and simultaneously to reducing income inequality. For this reason, linkages between farm and non-farm sectors are thought to be the strongest in the rural sector.

Some studies on household behaviour have suggested that entry into non-farm activity is seen from the point of view of survival strategies by the poorer households. Therefore, given the environment in which the rural household finds itself, it tries to maximize the return on labour as well as capital by distributing resources over both farm and non-farm activities (Rakodi 1999, Mishra 2002). It is well acknowledged in the literature that non-farm sector serves as either a major source of income or as supplementary income for rural households.

Three factors of rural livelihood circumstances are mentioned as determining the nature and extent of diversification – seasonality, risk and vulnerability (Mishra 2002). The author suggests that the rural economy in which farming is wholly dependent on climatic conditions suffers from all the three factors. For instance, during a season of low crop output, the low farm yield may mean both lower level of available food and income for the farmers. To plan against this situation, household becomes less dependent on agriculture. Such a strategy according to Mishra (2002) involves diversification, to reduce the risk of income failure as well as intra year and inter year income variability by diversifying economic activities.

Several authors suggest that given the importance of farming as the major source of livelihood for both the landless and small farmers, the non-farm sector offers capacity for diversification (Reardon *et al.* 2002, IFAD 2009b). Rural households may engage in the non-farm sector as employers, self-employed entrepreneurs or as employees (IFAD 2009b). Furthermore they may seek non-farm employment only part-time during off-farm seasons, returning to farm work during the farming seasons. “Such diversification by rural households is less of a planned strategy and more of a coping behaviour according. Still the end result is one of managing a complex portfolio of not only capital but also time” (Mishra 2002).

“Households aim at a livelihood which has a high resilience and low sensitivity to shocks. The poor may be seen as managers of complex portfolios in which assets are inter-related, complementary and aimed at increasing income. In rural areas, people are engaged in the non-farm sector as ‘self-employed’ (i.e. working for themselves on a wide variety of activities), in casual and regular wage labour in microenterprises employing no more than ten employees, or in small enterprises employing more than ten employees” (IFAD 2009b: 2).

Hart (1994) explains two forms of diversification as opportunity-driven and survival-driven diversification. The first describe people who diversify to accumulate wealth and the second refer to individuals who diversify in order to survive. Accumulation of wealth becomes the motive of diversification once survival has been overcome (Mishra 2002). According to Fabusoro *et al.* (2010), diversification is a household survival strategy for risk reduction, overcoming income instability caused by seasonality and improving food security.

The farm sector alone rarely provides sufficient household income in rural farming communities. As a result of this, most rural households depend on a diverse range of activities and income activities in the non-farm sector. In African countries, most of these activities are informal and mostly self-employed or family owned and operate with one person owner and unpaid family members. The majority of these activities are faced with numerous problems that affect their performance and also reduce their ability to contribute significantly to growth and poverty reduction. These problems ranges from the lack of access to credit, inadequate managerial and technical skills, and low levels of education to poor access to market information and an inhibitive regulatory environment (IFAD 2012).

Nigeria is blessed with abundant natural resources, land and crude oil, but still more than 60% of its population is poor (UNECA 2005). Despite Nigeria’s plentiful agricultural resources and oil wealth, poverty is widespread in the country and has increased since the late 1990s. Over 70% of Nigerians are now classified as poor, and 35% of them live in absolute poverty (IFAD 2009a). This is due to a recurring failure of past government officials to effectively manage the human and natural resources (UNECA 2005). The economy is over dependent on the capital-intensive oil sector, which provides 20% of GDP, 95% of foreign exchange earnings and about 80% of government revenues (UNECA 2007).

Nigeria’s former rulers failed to manage or diversify the economy, hence agriculture and the rural non-farm sector, which would have offered an alternative sector to oil was neglected according to UNDP (2003). As a result, the largely small-scale farm and non-farm activities

have not kept pace with rapid population growth. The dominance of oil and the government's dependency on oil resources have all but crowded out productive economic activities in other sectors, especially agriculture from which more than 70% of the population derives its livelihood (UNDP 2003). While agriculture employs over 70% of the active labour force and accounts for about 40% of GDP, the oil sector employs only about 5% of Nigerians (ibid).

Despite having the seventh largest oil and gas reserves in the world and being the World's sixth largest exporter of crude oil, Nigeria's GDP per capita annual growth rate in real terms has been negative or zero for more than two decades (UNECA 2007). Current GDP per capita, in terms of Purchasing Power Parity (PPP) is US\$896.00, which is significantly lower than the 1977 figure of US\$1160.00 (UNDP 2003). UN report maintains that the structural adjustment programme of the 1980s and other economic policies that followed have failed to tackle the poverty situation. As a result, there are large disparities between rich and poor, between men and women, as well as between rural and urban dwellers (UNDP 2003).

While there is continuing debate in the literature about the appropriateness of economic growth to achieve poverty reduction, there is a large consensus that African countries have the potential for a sustainable economic development and growth. There has been an outpouring of empirical research on the link between economic development, growth and poverty, such as in World Bank publications, Millennium Development Goals and Poverty Reduction Strategy Papers (PRSPs). It is evident that the most effective means to reduce rural poverty is to increase the productivity of farm and non-farm activities.

Collier and Dercon (2009) maintain that for economic development to succeed in Africa in the next 50 years, agriculture will have to change beyond recognition. They question the case for smallholders as engines for growth. Rather, these authors suggest that production will have to increase massively, but also labour productivity requiring a vast reduction in the proportion of the population engaged in agriculture and a large move out of rural areas.

The United Nations and World Bank (WDR 2008) have suggested that pro-poor growth must be in sectors where the poor are able to use the resources at their disposal. For Africa, they maintain that poverty incidence is mostly in the rural areas. Hence, pro-poor growth must be focused on improving income and increasing productivity in rural areas.

The World Bank has shown that agriculture has yet to perform as an engine of growth and poverty reduction in most Sub-Saharan countries. The World Bank (2008: 38) reveals that four hypotheses could explain this divide between promise and reality as:

- Agricultural productivity growth is intrinsically slow, making it hard to realise its growth and the poverty-reducing capability of agriculture;
- Macroeconomic price and trade policies unduly disfavour agriculture;
- There has been an urban bias in the allocation of public investment as well as under-investment within agriculture; and
- Official development assistance to agriculture has drastically declined.

Source: World Bank (2008: 38)

The World Bank (2008) addresses and summarises three main aspects of policies that can promote agriculture and increase poverty reduction into three main areas as:

- What can agriculture contribute to development? Agriculture has served as a platform for growth and poverty reduction in many countries, but more countries could benefit if government and donor agencies were to reverse years of policy neglect and remedy their under-investment and maintain a steady investment in agriculture;
- What are effective mechanisms in using agriculture for development? Top priorities are to increase the assets of poor households, make all levels of agriculture more productive, and create opportunities in rural non-farm economy that the rural poor can exploit; and
- How can agriculture-for-development agendas best be implemented? By designing policies and decision processes most suited to each country's economic and social conditions, by mobilising political support, and by improving governance and political institutions.

Source: World Bank (2008: 2)

“Agriculture contributes to development as an economic activity, as a livelihood, and as a provider of environmental services, making the sector a unique instrument for development. Improving the productivity, profitability and sustainability of smallholder farming is the main pathway out of poverty in using agriculture for development” (ibid: 3).

The World Bank suggests that a broad array of policy instruments, many of which apply differently to commercial small holders and to those in subsistence farming, can be used to achieve the following: improve price incentives and increase the quality and quantity of public investment; make product markets work better; improve access to financial services and reduce exposure to uninsured risks; enhance the performance of producer organisations; promote innovation through science and technology; and make agriculture more sustainable and a provider of environmental services (World Bank 2008).

The African Economic Outlook (2012) state that linkages between urbanisation, the rural non-farm sector and agriculture are important and work to strengthen rural economies in Africa. Mishra (2002) describe the three features of the rural sector which are crucial for the non-farm sector as: the rate and pattern of agricultural growth; the availability of employment opportunities in nearby towns, which can generate additional income; and the effectiveness of transport and trading systems that support rural-urban linkages and demand for non-farm goods and services.

2.3 Summary of Literature Review and conceptual framework

In this chapter, the study explored the conceptual and empirical perspectives provided by the literature on rural livelihood and determinants of income. The literature provided clearer and more consistent analytical categories of farm and non-farm sources of income. It revealed several factors which are critical to livelihood in the rural areas. The factors considered from literature important to this study centre on variables which are crucial to asset formation (discussed in section 2.2.1 – 2.2.6). This provided the foundation upon which the research based its analysis of farm and non-farm income determinants.

There is abundant evidence from literature to show that the rural economy is no longer solely dependent on agriculture, but on a both farm and non-farm activities. Livelihood diversification was described as a process, by which households engage in diverse portfolio of activities and asset formation in order to increase income and welfare. The literature describes the various elements which affect the rural business environment as high cost of farm inputs, prices and inflation, marketing and competition. These formed part of the qualitative analysis and discussion presented in Chapter Six (Section 6.4.1 – 6.4.4).

Literature review provided insight on how changing access to livelihood resources and opportunities results in different livelihood outcomes, which in turn influences inequality and

poverty rates. The literature distinguishes between factors which enable people to achieve their livelihood targets and those who discourage people. Human capital (education), financial capital (availability of credit), non-farm opportunities (diversification), infrastructure, farm size and land were the most cited factors affecting rural people (all part of the sustainable livelihood framework described in Section 2.2 and figure 2.1a & 2.1b).

Review of literature also identified some empirical and methodological gaps in livelihood studies. It is well known that households undertake a range of on-farm and off-farm activities. However, it is not clear what proportion of income generated by one sector is reinvested in the other sector. This problem is associated with lack of appropriate data for analysing rural livelihood. Though it is widely understood that income generated from non-farm activities and employment can provide farmers with the capital that enables greater on-farm improvement and expansion.

Another problem identified from literature is that most of the authors relied on inter-sector growth analysis to define the importance of farm and non-farm activities, without real participation of people at the household level. This leads to the adoption of qualitative and quantitative methods of research, which form the core of this thesis, in an attempt to provide a micro level analysis of rural livelihood, using the household as the unit of inquiry.

Most of the literature on rural livelihood studies in Africa is conducted to focus on agricultural activities, since it is generally assumed that rural people depend solely on agriculture for their livelihood. It has been suggested that households in developing countries earn more from own-farming than any other sources except in few countries where landless peasants constitute a sizeable population is the importance of non-farm income greater than own-farm income (Escobal 2005). Although there is contrasting views about the appropriateness of economic growth to achieve poverty reduction, there is a large consensus that African countries have the potential for a sustainable economic growth.

Several authors agree that the good performance of both farm and non-farm sectors are crucial to rural development, economic growth and poverty reduction of many developing economies. The majority of the literature suggests that agriculture alone cannot reduce rural poverty; non-farm sector is also very important. At the same time, it is believed that growth in rural non-farm employment in many cases remains closely linked to growth in agriculture.

2.4 Gaps in Knowledge

The rural sector in Nigeria has been viewed as that of a sector driven by agriculture alone. Rural output is computed as agricultural output in-terms of contribution to overall national economy and poverty. Hence, past and present policy makers view policies to combat rural poverty or increase welfare as policies to increase rural agriculture.

Until 2010, the two main official sources of information in Nigeria concerned with national data (NBS and CBN) have consistently reported rural household income as agricultural income. The NBS 2010 report was the first that shows diversification of income sources featuring four categories as: agriculture/livestock; wage; household enterprise; and other.

Review of literature show that the rural growth model, which suggests that agriculture is always the initial driver of rural development is too narrow (Kusters 2010). Several authors have reported diversification as the norm among rural households, yet it is still unclear if it is good for increasing household income according to Onyeiwu and Liu (2011). The literature showed that most data used for livelihood studies in Africa does not provide a clear understanding of rural livelihood at the micro level, since data is not collected from the household level and the analysis represent macro views.

Several authors maintain that land fragmentation in the rural areas is the main reason for subsistent farming in Africa. Also, lack of land is the main cause of low income and high poverty rates in most African rural communities (Mehrota and Delamonica 2007, IFAD 2008, WDR 2008, GCARD 2010). It has also been suggested that households with less than 0.5 hectares earn more than half of their income from non-farm sources (IFAD 2009b: 2). However, these studies do not provide an insight to conditions where ownership of small farm land is not the case but still there is low income and widespread poverty.

Chapter Three

Research Design and Methodology

3.0 Introduction

The importance of choosing a suitable methodology is crucial if researchers want to obtain appropriate information to complete their work according to Bell (1987). It has been stated that researches into rural livelihoods must make difficult choices, because the encompassing character of the livelihood concept means that almost any aspect of the way people go about gaining a living is potentially legitimate to investigate (Ellis and Freeman 2004). This research embarked on collection of data through primary and secondary sources based on the rural livelihood system and vulnerability framework discussed in chapter two.

3.1 Research Design

The strategy adopted in this research is one influenced by a ‘positivist’ approach. The aim was to employ both qualitative and quantitative methods. As such, research questions were developed to gather both qualitative and quantitative data. Qualitative methods collect data, which expresses information about feelings, values and attitudes (David and Sutton 2004). Qualitative research usually emphasises words rather than quantification in the collection and analysis of data (ibid: 35). As a strategy it is inductive, constructive, and interpretive, but qualitative researchers do not always subscribe to all these features (David and Sutton 2004). Renner and Taylor-Powell (2003) maintain that qualitative approach seeks to provide understanding from the respondent’s perspective (for example, it tries to answer the questions: “What is unique about this individual, group, situation or issue and why?”).

Quantitative research requires employing quantitative theoretical and methodological principles, techniques and statistics (David and Sutton 2004). The authors maintain that it refers to scientific observations that are recorded in a numeric or some other standardized coding format. Quantitative research is aimed at collecting information on all aspects of income activities, expenditures, savings and investment patterns of rural households. On the other hand, qualitative data is applied to collect information on feelings, personal experiences and observations of rural people in their effort to operate, manage and derive income from employment opportunities for their survival in a rural environment. This mixture of qualitative and quantitative data collection has become popular in research as shown by several authors (Boot *et al.* 1998, Kanbur 2001, White 2002, Ellis and Freeman 2004).

The literature shows the exclusive use of quantitative techniques in social research as a process of scientifically measuring human experiences, conditions and processes (Kutengule 2000). Qualitative procedures, on the other hand, are widely used to investigate the complexity and subjectivity of human experiences and social processes (ibid: 61). In pursuing the objectives of this study, quantitative and qualitative approach was adopted; since livelihood studies require collecting both household and community level data as shown by several authors (for example, Ali, Mwabu and Gesemi 2002, Ellis and Freeman 2004).

The literature show that several authors have argued for use of an integrated method of both quantitative and qualitative methods (Leach and Kamangira 1997, Blaikie *et al.* 1998). Nevertheless, all research is regarded as both qualitative and quantitative (David and Sutton 2004). Although both methods are employed in this research, more priority is given to collection of quantitative data. As a result, the research focuses more on the collection of a detailed numeric statistical data. It incorporates quantification in the collection and analysis of data. As a research strategy it is 'deductivist' and 'objectivist' and incorporates a natural science model of the research process influenced by positivism (ibid: 35). The mixed approach is adopted since there can be no absolute separation between the two methods; in social research the boundary between both methods is not set by any single or agreed set of principles according to David and Sutton (2004).

There are advantages in using both the inductive and the deductive research methods. Induction approach allows for exploration and a greater insight into the lives of those studied, while deduction, due to a tighter focus, allows for greater reliability and generalisation (David and Sutton 2004). The authors suggest that all research must claim some degree of depth validity and generalisation if it is to be called research, rather than art. As such the inevitability and the necessity of combining qualitative and quantitative research leave room only to ask how such a combination is best effected in particular circumstances and in reference to particular questions (ibid).

One of the problems identified in the literature review was that most studies conducted in Nigeria are based on agricultural production and food security. The assumption is that food production decline is the root cause of rural poverty and food insecurity in Africa (UN 1997 and World Bank 1997). While some literature tends to associate people's vulnerability to food insecurity and poverty with land holdings (World Bank 1996), but it has been shown by many authors that land is not the only resource that is required for agricultural production.

Also, farming is not the only source of rural household income. Even though the majority of the rural economy in Africa depends on agriculture, several studies have shown that rural people also depend on other sources of income and livelihoods to construct a living (Carney 1998, IFAD 2012, Reardon *et al.* 2002, World Bank 2008). These other sources are non-farm activities. The importance of non-farm activities as a source of rural livelihood has not been sufficiently investigated in Nigeria; hence gaps in knowledge still exist.

Though it has been proven that non-farm incomes and activities constitute a greater part of rural livelihood, the importance of non-farm sectors has not been adequately taken care of within the Nigerian national framework for poverty reduction strategies of ‘The National Economic Empowerment and Development Strategy’ (NEEDS). NEEDS is the guiding framework for economic reforms in Nigeria, which is targeted at accelerating economic growth, reducing poverty, and achieving the Millennium Development Goals (MDGs) 2000, which is set out in the Poverty Reduction Strategy Papers (PRSPs 2001).

NEEDS focuses on a framework targeting the rural poor, among others. It highlights the importance of provision of policies, schemes and programmes that will give the rural poor access to credit and land; participation in decision making; agricultural extension services; improved seeds, farm inputs, and implements; as well as the strengthening of traditional thrift, savings, and insurance schemes.

3.2 Method of Data collection

It is in recognition of the identified gaps in knowledge about rural livelihood that this research was designed to facilitate detailed analysis of farm and non-farm livelihoods through primary data collection that will involve survey at household level. Secondary data was also collected from the national data base to define the national context of livelihoods.

3.2.1 Primary Data collection

This research focuses more on collection of primary data since this was one of the identified gaps in the literature on rural livelihoods. Review of literature showed that most data used for livelihood studies does not provide a clear understanding of rural livelihoods since data is not collected from household level, and results represent the macro view only. Several authors have stressed the importance of household surveys. A better understanding of rural asset utilisation, income generation and constraints to poverty reduction requires micro-level

information gathered through household surveys and community mapping (Onyeiwu and Liu 2011: 3).

Household primary data gathering involves researchers undertaking the data collection themselves by visiting the households to generate information. It allows the researcher to determine the design, conceptual framework, sampling technique, method and measurement tools (David and Sutton 2004). Primary data was collected through pilot and household surveys using a questionnaire method (which is explained later in this Chapter).

3.2.2 Secondary Data

Secondary data involves identifying, exploring and analysing an existing data-base. The analysis of secondary data needs to be classified within the context, scope and conceptual framework of the original study. It enables the researcher to analyse data from a larger sample than would be possible within the financial and time restrictions of their research (David and Sutton 2004). The various sources from where secondary data was collected for this study include - Federal Government of Nigeria, NBS, CBN and The World Bank. This was used to define and explain the national and regional context of rural livelihood and poverty. Secondary data showing the national trend is presented in the Appendix 5.

3.3 Questionnaire Design

The sustainable livelihood framework (discussed in Chapter two, Section 2.1.5) place considerable emphasis on ownership of assets that could be put to productive use as a means through which the poor could escape from poverty. In this respect, successful asset accumulation is often observed to involve trading-up assets in sequence, for example, chickens for goats, cattle for land, or cash from non-farm income to farm inputs and higher farm income to land or to livestock (Ellis *et al.* 2003). It is through these activities that rural households are able to make their livelihood over time. However, these efforts are hampered by the near absence of infrastructure, modern technology, poorly functioning markets, lack of credit, modern technology and social welfare services.

The centre of inquiry in this research is the ‘household’. A Questionnaire was designed to cover all aspects of livelihood at the household level (Appendix 6). “A household comprises a person or group of individuals generally bound by ties of kinship with others who live together in the same house or within a single compound and who share a community life in

that they are answerable to the same head and share a common source of food” (Kutengule 2000: 59).

The definition of a ‘household’ in the above context highlights two main conceptual issues. “First, the definition places much weight on co-residence under a single roof or within a compound. The problem is that some studies suggest that some members of households may actually migrate to live and work elsewhere but still significantly influence the affairs and livelihoods of the residents of the household and even the whole village. For example, some households may report receiving remittances sent by household members working away from home, which would be recorded as non-farm income for the receiving household. The second one is the suggestion in the definition that members of a household are answerable to one ‘head’ who manages their affairs and that using this concept, may pose certain definitional and empirical problems because households take different forms in different cultures and across different social groups” (Kutengule 2000: 60).

The literature show that differences in socio-cultural structures and livelihood assets contribute to differences in livelihood experiences. Kutengule (2000: 54) noted that these socio-cultural factors are local cultural practices and the structure of rural society within which individuals and households are embedded and of which they form an integral part. These socio-cultural factors are associated with some of the aspects of ‘human and social capital’ and assets transforming structures and livelihood processes (all part of the Sustainable Livelihood Framework) which was discussed in Chapter Two. This study reviewed the concept of household as it relates to the study area and designed the questionnaire to account for these identified problems. It focuses on identifying how access to livelihood opportunities and assets influences livelihood outcome and vulnerability.

3.4 Types of Data and Research Questions

Data was structured into three divisions to collect both quantitative and qualitative information as below:

- A household module collected data on household characteristics: age, sex, family size, occupation, education, savings, income, migration, consumption expenditures, ownership of assets, membership of social organisations and employment history, etc.

- An enterprise module collected information about ownership and management, investment and expenditure patterns, factors driving diversification, factors hindering diversification or production, access to market, credit and basic infrastructure, etc.
- The community based questions gathered information on community characteristics such as access to schools, roads, markets, hospital, development projects, ownership of land, gender issues, sources of information, consumer and producer prices, etc.

The research focuses on rural livelihoods which includes assets and activities that people undertake in order to construct a living. It analyses some factors that are considered to be crucial from the literature, in determining rural household incomes and poverty reduction in the Nigerian context – non-farm diversification, education, age, financial capital, infrastructure, household labour and farm land. It describes how these factors play complementary roles in the process of income generation. It acknowledges the existence of other factors which promote poverty reduction such as good governance, institutional reforms, land reforms, nutrition and health, gender inequality, market and trade, which are not covered by this research.

In using the household as the unit of inquiry, the research hopes to develop a greater understanding of farm and non-farm linkages in the rural sector, where agriculture is the primary source of income. This will make a further contribution to the existing literature on the importance of non-farm income to household income and rural poverty reduction.

3.5 The Study area

This study focuses on households and the rural environment to investigate livelihood outcomes. Mwabu and Thorbecke (2004) defined rural population as ‘population concentrations (in village/towns) below a threshold that varies (in official definition) by country, usually concentrations of 1000 – 2000 or less. In this context, an area or people are considered rural if they work and/or live on farms or depend mostly on farming. In Nigeria, areas with population sizes above 20,000 people are considered urban, meaning that rural areas have sizes below this cut-off point (ibid: 18). These authors maintain that from these definitions, it is evident that identifying ‘rural people’ is akin to identifying poverty.

The survey region is the South-eastern region of Nigeria which comprises 5 of the 36 states. The states in this region share common characteristics in terms of climate, economic, language, urbanisation and rural conditions. Ebonyi State is the study area with a population

of 2.1 million out of the total 150 million Nigerian populations (NBS 2006). The main occupation is farming, while trading is very common in the urban areas. The state is mainly an agricultural area. Agriculture – mainly crop and livestock farming provides about 90% of employment for the entire population (EBSG 2000). The major cultivated crops include yams, rice, potatoes and vegetables while livestock includes cattle, goats, sheep and free range poultry. The state comprises 13 Local Government Areas (LGA) and one main urban town (Abakaliki, known as the capital) and two semi-urban towns (Afikpo and Onueke).

In the Nigerian Living Standard Survey (NLSS) 2009/2010, Ebonyi State ranked second highest (27.6%) of ‘very poor’ and third highest (51.4%) of ‘poor’ household categorisation out of the 36 States of Nigeria (Appendix Table 5.1). Other criteria adopted in choosing Ebonyi State as the study area is based on the following-

- High proportion of rural population – Of the 13 Local Government Areas of the state, 11 are classified as rural, as the entire state has only three urban centres;
- More than 90% of households who live in these rural villages are farmers and depend on farming for their livelihoods, for this reason, the state is always described as the food basket of Nigeria ;
- There is a high proportion of farming activities and high farm size holdings among farming households; and
- Farming is part of the tradition in the rural communities and most communities are remote without access to basic infrastructure – water, electricity and paved roads.

Source: EBSG (2000)

3.6 Sampling Procedure

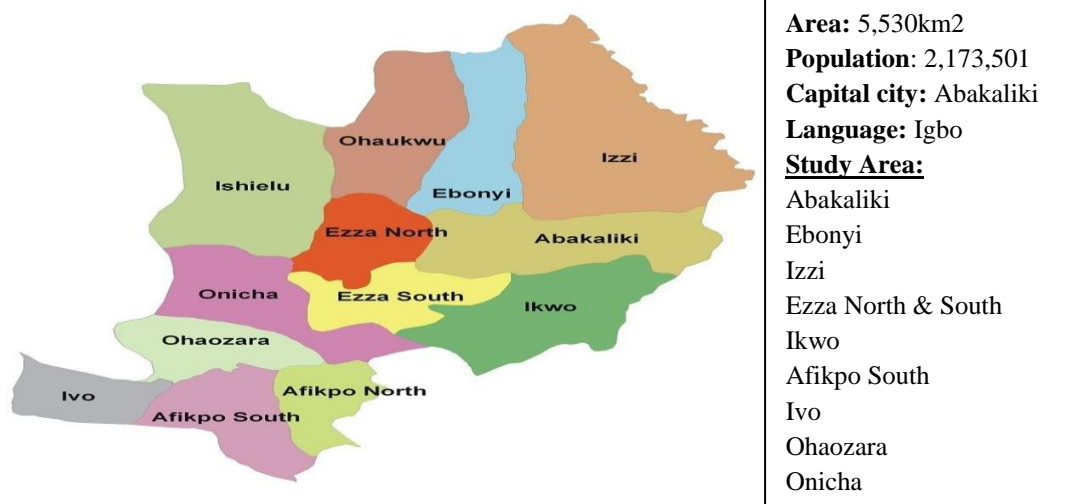
Sampling refers to the selection of materials such that the selected sample is ‘representative’ of the population the researcher is interested in (David & Sutton 2004). The first step adopted in this study was to define the population and study area to be surveyed. Having identified the study area, mapping of the study area was carried out to identify the communities, where data will be collected. Ten out of thirteen Local Government Areas of Ebonyi State were selected as reflected in Figure 3.1. Two villages were randomly selected for the study, from each of the ten Local Government Areas (based on the criteria of: one village from a remote and one from a non-remote community of each LGAs), making a total of twenty villages.

3.6.1 Sample Population

For each of the 20 villages selected to be investigated, a list of 100 farmers' households per village was generated from the list of farmers in the state held by the state Agricultural Development programme (making a population of 2000 farmers as a sample frame). Twelve Households were selected from each village. The sampling technique adopted is based on probability samples, where each member in the population has an equal chance of being selected by means of simple random sampling. The term 'random' refers to a selection based on a mathematical formula that will consistently give all units an equal chance of being selected (David and Sutton 2004).

During the household survey, a three-stage cluster design was employed – Enumeration Areas (EAs), the Primary Sampling Units (PSu) and the Housing Units (HUs). The EAs constituted 10 Local District Areas chosen out of the 13 LGA of the state. The PSu comprises 2 villages selected from each LGA. While the HUs made up 12 households selected from each of the villages. For each LGA selected, villages were chosen by simple random sampling based on: one was selected on the basis of its remoteness and another is selected on its closeness to urban areas, major roads and markets. A total of 240 heads of household took part in the survey and the process involved pilot and household surveys to collect primary data from the selected households.

Figure 3.1 Map showing the study area (Ebonyi State of Nigeria)



Source: NBS (2006)

3.6.2 Pilot Survey

The pilot survey provides a better understanding of how the prospective respondents think and live, and issues that may need to be addressed before the main survey. The aim was to gauge what the research questions might mean to those intended to answer them and it is an essential first step in the household survey (David and Sutton 2004). The pilot survey was carried out one month prior to the commencement of the original field work. The need to test a questionnaire is acknowledged by Oppenheim (1992) and Kane (1995) stating that some literature suggests a small pre-test size ranging from 5 – 10 or 50 – 100.

The pilot survey provided the opportunity of visiting the villages to be surveyed and holding a meeting with the village elders or heads with a view to explaining to them the reasons for the household survey. It also provided first-hand information on likely problems to be encountered during the main survey and ways to prevent or overcome them. The pilot survey was conducted in early October 2009 for two weeks using ten respondents from two different villages for that purpose. The experience from the pilot survey showed some bottlenecks. However, steps were taken to address these bottlenecks (as discussed in Section 3.6.4) before embarking on the main survey.

3.6.3 Household survey

This survey took the form of a self-completion and a face-to-face questionnaire interview in which the researcher reads the questionnaire to the respondents and fill-in the responses. One of the biggest advantages of face-to-face questionnaire survey is that there can be a greater use of open questions and the interviewer can provide additional explanation, if required, to aid the respondent's understanding of the questions (David and Sutton 2004).

The questionnaire was originally developed in English and then translated into appropriate language that respondents understand by the researcher (for households who did not understand English). The aim of the 'face-to-face questionnaire interview' method was to overcome the shortcomings from the lack of postal services and low literacy level in the study area. The questionnaire was designed to collect both qualitative and quantitative data on changing livelihood circumstances (such as employment, assets, business activities, incomes, savings, investments and vulnerability factors at household level). This method has been found to be a very useful method of data collection by many researchers in developing countries where level of education is low and postal services are lacking or unreliable.

3.6.4 Problems encountered collecting household data

There were difficulties encountered during the pilot and household survey. They included: (i) Most of the respondents were afraid to commit themselves to the interview as they feared information could be a government source of information for tax or levy purposes; (ii) Some of the respondents would not commit to taking part in the interview if they didn't know the interviewer; (iii) Some people complained that they had participated in so many other previous interviews and still nothing had changed for them; (iv) Most of the respondents could not provide exact answers to questions that demanded exact figures such as their income/earnings and expenditure, since most of them were not educated nor kept records of their farm or non-farm business activities; (v) Some complained about the time it might take from their busy activities; and (vi) Some people refused to take part no matter what our explanation and persuasion.

Some of the measures adopted to address the six shortcomings above were: (i) During the field survey attempts were made to contact village leaders, prior to the interview day, to explain our mission in the village and get the selected household to know that the interview was purely for academic purposes; (ii) Research assistants from each of the LGAs were recruited so as to eliminate the problem of a stranger conducting interviews. In this regard 10 postgraduate students were recruited from Ebonyi State University; (iii) Respondents were made to understand that the survey was purely for academic purposes and development of policy. Anyone who wishes to see a copy of it when the report is out is free to do so; (iv) Since most or all our respondents did not keep record of their expenditures and incomes, we encouraged them to give us a realistic estimate of what they can possibly remember. In some cases, the respondents were advised to ask anyone in the family, who could have a more reliable knowledge of the answers required; (v) In terms of time constraints, we asked our respondents to choose the most convenient time and place for them to be interviewed; and (vi) when some of the respondents refused to participate after all persuasion, we moved on to choose another household from the comprehensive list of farmers in the respective villages.

3.7 Data Analysis

The initial step was to identify the hypotheses that state the relationships the research intends to investigate. These relationships were derived from research questions identified from the objectives of the study, after a review of literature on rural livelihoods. Given that the ultimate objective in any investigation is to increase our understanding of a particular system,

we need to devise refined questions, the answers to which will indeed increase our understanding of the wider system under examination (Eddison 2000). This implies that interpretation of any result should be related back to the ‘big question’ identified at the onset of the research, according to Marshall and Rossman (1999).

“Data analysis is the process of bringing order, structure and interpretation to the mass of collected data. Data analysis contains three sub processes: data reduction, data display and conclusion/verification. These processes occur before data collection, during study design and planning; during data collection as interim and early analyses are carried out, and after data collection as final products are approached and completed” (Denzin and Lincoln 1994).

Both qualitative and quantitative data analysis was adopted in this research. The process of quantitative data analysis adopted in this research involved the key stages as developed by David and Sutton (2004) as follows:

- Data entry;
- Univariate analysis (the examination of individual variables);
- Bivariate analysis (the description and exploration of relationships between two variables);
- Multiple Linear Regression analysis (the expansion of the regression analysis); and
- Statistical testing to enable judgement as to the generalisability of sample findings to the sample population.

3.7.1 Data entry

Primary data collected during household surveys was entered into an SPSS data file. Due care and attention was taken during data entry to minimise or eliminate errors. Several preliminary entry checks and editing were carried out to ensure that coded data matched the responses recorded on the questionnaire during data collection.

3.7.2 Univariate analysis

This process was undertaken in order to describe and summarise the single variables in the entire data set. This procedure uses descriptive statistics which allows the researcher to first detect data entry errors, second to describe and report the data, and third to determine the suitability of the data for possible future statistical testing (ibid: 269). Descriptive analysis

involves selecting from a range of measures including counts, percentages, measurement of distribution and spread, and graphical presentations in chart form (David and Sutton 2004).

“Variance is a commonly used measure of dispersion. Its calculation is based on the means and involves calculating the distance between each of the values and the mean. One of the difficulties with calculating the variance is that because the calculation involves squaring the difference in distance from the mean and the observed value, the resulting values are not in the same units as the original values. This makes interpretation difficult. However, if the variance is then square-rooted, this returns the values to the same units. The square root of the variance is known as the standard deviation” (ibid: 269).

3.7.3 Bivariate analysis

This procedure was used to explore relationships between two variables. These relationships were earlier identified in the hypotheses and research questions at the outset of the research. According to Davis and Sutton (2004) it is used to focus on describing relationships between categorical variables (nominal and ordinal) and between two interval variables. In addition to describing a relationship, measures of association can be calculated to measure the strength of relationship (ibid). These variables are the independent and dependent variables. The independent variable is identified in the hypotheses to be acting upon and influencing the dependent variable. The calculation of the correlation coefficient was undertaken in conjunction with a scatter plot of the two variables.

“A scatter plot allows the researcher to visualise the co-variance between the two variables. Correlation analysis of interval ratio variables involved the calculation of the Pearson product-moment correlation coefficient. The value of the correlation coefficient will vary between -1.00 and +1.00 reflecting the strength and direction of the association between the two interval variables. A correlation of +1 indicates a perfect positive association between the two interval variables, whereas correlation of -1 indicates a negative association between the two interval variable” (Dowdy and Wearden 1983: 230).

Pearson’s correlation coefficient was used to explore the data analysis by carrying out simple regression analysis. This method tests the effect of the independent variables on the dependent variables to determine their various relationships. Regression analysis is designed to measure the association between two interval variables, in order to calculate a predictive equation enabling the values of both variables to be determined. Regression analysis requires

the two variables to be clearly defined as independent and dependent and showing that one has an effect on the other, according to the theoretical model designed by the researcher.

All the independent and dependent variables were identified and analysed using simple regression and those relationships with R^2 of 0.5 upwards (regarded as a good correlation or fit by some authors) was then selected to be used in the multivariate analysis. The simple Regression equation used was $y = a + bx + e$

3.7.4 Multiple Linear Regression Analysis

Multiple linear regression analysis was used to explore and understand further relationships between all independent variables that could possibly affect the dependent variables. Review of the literature on determinants of household income showed that there are various factors that influence farm and non-farm income. The independent variables identified in this study were level of education, age, household labour force, farm size, proportion of farm land owned, amount of savings (capital), ownership of non-farm enterprises and access to basic infrastructure (such as road and electricity).

The Multiple Linear Regression assumptions according to Field (2009) are – values of X are independent of each other in linear relationship between y and X_1, X_2, \dots, X_i .

The equation for multiple regression analysis used and explained in Chapter 5 (5.6.2) is:

$$y = a + \beta_1 x_{1i} + \beta_2 x_{2i} + \dots + \beta_n x_{ni} + \varepsilon_i$$

3.7.5 Statistical Testing of analysis

Various literatures on determinants of household income using regression analysis were reviewed to distinguish between dependent and independent variables. Some regression diagnostics were carried out to ensure that the research model developed was statistically correct. The ‘level of correlation’ of the model and the ‘statistical significance’ of the estimated parameters were checked. These include R-squared, analysis of the pattern of residuals and hypotheses testing. Statistical significance was checked by an ‘F-test’ of the overall fit, followed by ‘T-test’ of individual parameters.

‘Assumptions of normality and homoscedasticity’ for each relationship were explored and no obvious violations were detected and where an outlier was identified, the case was removed and the regression re-run. While Collinearity diagnostics were undertaken to ensure there was

no one independent variable that was the linear function of another independent variable. Durban-Watson was used to test independence of the residuals in the association. Dummy variables were used for conditions; 1 = condition met and 0 = condition not met.

3.7.6 Summary of Statistical Analysis

There are several methodological issues to understand concerning hypothesis construction and testing. The process starts with accepting or rejecting a hypothesis, then formulating a new, more generally applicable theory to explain observations. This is a very productive method of increasing our understanding of relationships of the variables being investigated.

Quantitative data collected during the household survey was analysed in Chapter Four and Five by tabulating the distribution of income sources, activities and vulnerability outcomes. Multiple Linear Regressions was used in Chapter Five to analyse determinants of household income of the whole population sample and across socio-economic groups or vulnerability groups identified within the study population. This process revealed the pattern of income, livelihood diversity and distribution including association between variables that determine various livelihood outcomes. This led to developing the research model.

3.7.7 Difficulties encountered analysing data with Regression analysis

In statistics Regression analysis includes many techniques for modelling and analysing several variables, when the focus is on the association between a dependent variable and one or more independent variables. It helps to understand how the typical value of the dependent variable changes when any one of the independent variables is applied, while the other independent variables remain fixed. Results are normally interpreted in terms of levels of statistical significance in relation to acceptance of individual coefficients and the estimates of R-square and F-test to establish the explanatory power of the whole regression model.

Level of significance of 1% to 5% is used in the literature in determining acceptability of individual coefficients. Kuntengule (2000) maintained that the implication is that the results can be interpreted as objective findings from the research even if their significance might have been manipulated to fit the researcher's expectations or interests by choosing their preferred levels of statistical significance. The author suggest that there is no clear fixed rule, within the statistical and econometric tools of analysis, on what levels of significance would be appropriate for what type of association.

In the four regression models developed for this research, the level of significance was set at 5% for all variables regardless of the pattern of relationship under investigation. R-square values (.500) and over was accepted in the models, although there are no clear rules regarding what is a strong R-square value and what is a weak one. Regression analysis therefore, can only be interpreted in terms of association between variables but cannot be used to interpret the cause and effect of a relationship that existed (Kuntengule 2000).

“However, we are often interested in testing whether a dependent variable (y) is related to *more* than one independent variable (e.g. x_1 , x_2 , and x_3). However it is possible that the independent variables could obscure each other's effects. For example, an animal's mass could be a function of both age and diet. The age effect might override the diet effect, leading to a regression for diet which would not appear very interesting. One possible solution is to perform a regression with one independent variable, and then test whether a second independent variable is related to the residuals from this regression. You continue with a third variable, etc. A problem with this is that you are putting some variables in privileged positions” (Palmer 2011).

In this research eight independent variables were identified as factors determining inter-household income variations. Each of the eight variables was tested against the dependent variable before being subjected to Multiple Regression analysis. Figure 3.2 shows the research process and methods adopted.

The model for a multiple regression takes the form: $Y = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \dots + e$

And we wish to estimate the $\beta_0, \beta_1, \beta_2$, etc. by obtaining $Y_1 = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + \dots$

The b 's are termed the "regression coefficients". Instead of fitting a line to data, we are now fitting a plane (for 2 independent variables), a space (for 3 independent variables), etc. Along with a multiple regression comes an overall test of significance and a multiple R squared (which is actually the value of r^2 for the measured y vs. the predicted y) (David and Sutton 2004). The following is usually provided by most regression software: adjusted multiple R^2 ; a regression coefficient (b); a standardized regression coefficient (b), if all variables are standardized; t value; and p value associated with that t value.

“The standardized coefficient is handy: it equals the value of r between the variable of interest and the residuals from the regression, if the variable were omitted. The significance tests are conditional (this means given all other independent variables that are in the model).

This independent variable does not explain any of the variation in y , beyond the variation explained by the other variables. Therefore, an independent variable which is quite redundant with other independent variables is not likely to be significant” (Field 2009).

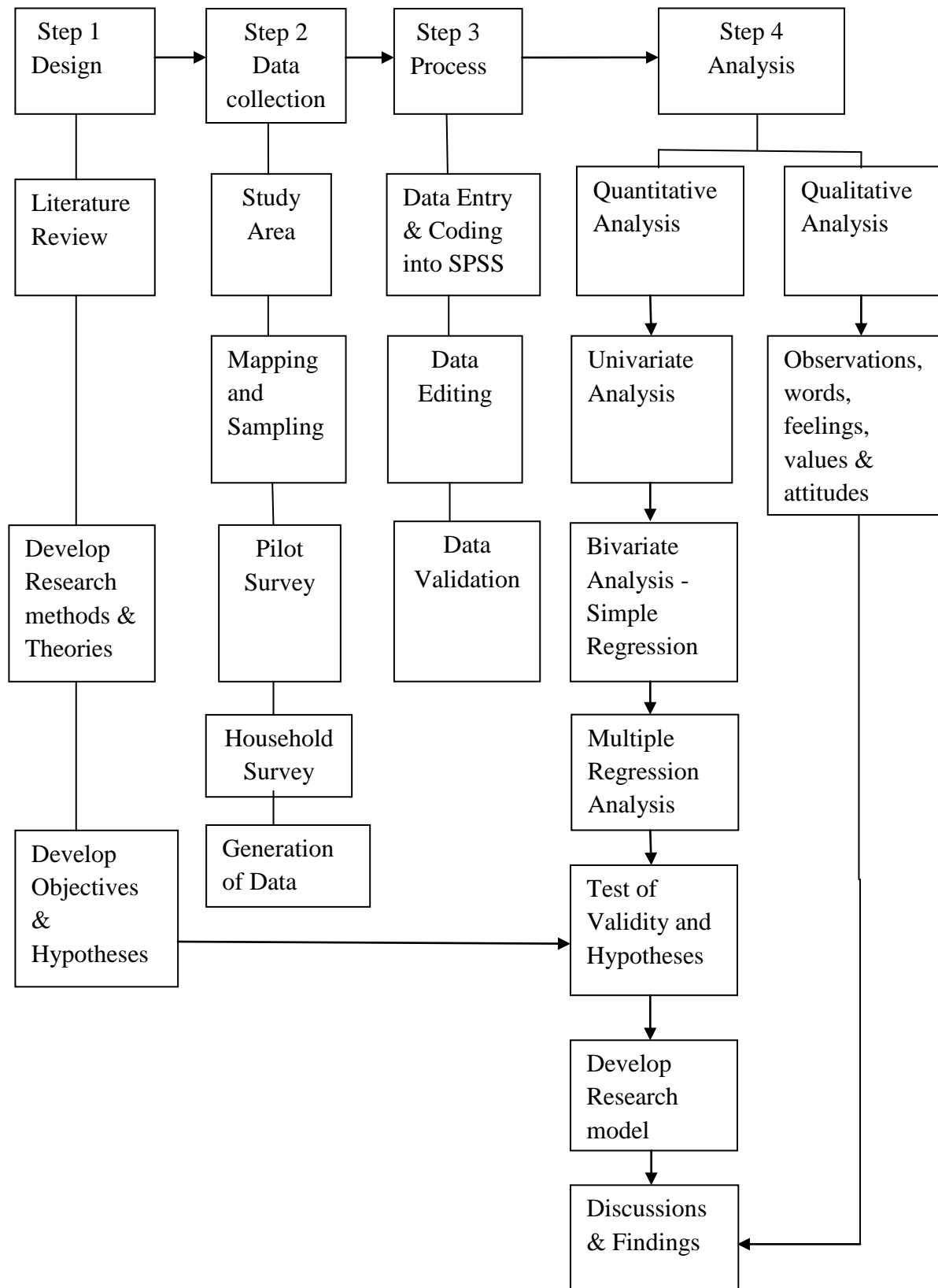
It is possible for some variables to be significant with simple regression, but not with multiple regression. This is called the problem of *multicollinearity* (though whether it is a 'problem', or something that yields new insight, is a matter of perspective) according to Palmer (2011). Correlations were examined to identify any multicollinearity, and variables removed from the model.

Another problem was the difficulty faced in including explanatory variables that were hard to measure even though literature on livelihood diversification processes recognises them as important ones. These variables include physical capital (infrastructure) and ownership of non-farm enterprises. In this research, these factors have been included in the models as dummy variables.

Morris (1998) noted that his attempt to measure social capital in his study of the relationship between social capital and incidence of poverty in several Indian states were unsuccessful because of the difficulties in measuring explanatory variables. The same problem was reported with Widner and Mundit (1998) in applying regression analysis to measure the relationships between social capital and economic development in Botswana and Uganda. In this research, access to basic infrastructure and ownership of non-farm enterprises was considered among the factors influencing income and was assigned as dummy variables.

Data collected on income and expenditure patterns of households were used for the analysis. During the field survey, income information generated was an estimate of what the respondent could remember, since households did not keep records of income and expenditure they undertook over a period of time. It is possible that such information was over or under estimated during the interview. Schultz and Tansel (1997) suggested in their study of wage and labour supply effects on illness in Cote d'Ivoire and Ghana, that self-reported factors could be either over estimated or under-estimated due to recall problems. Kutengule (2000) maintain that attempts to solve the econometric problems that arise due to errors of measurement, such as inefficiencies in the estimation of heteroscedasticity, results in serious problems which even state of the art econometric techniques can hardly resolve. Figure 3.2 summarises the methodology adopted in this research.

Figure 3.2 Summary of adopted Research methodology



Chapter Four

Livelihood, Assets and Vulnerability Approaches in the study Area

4.0 Introduction

This Chapter explores livelihood approaches that form the basis for this research in determining linkages between farm and non-farm activities and how these sources contribute to livelihood vulnerability. It is based on theoretical background offered by various authors on sustainable livelihood theories and the importance of the rural farm and non-farm sectors. As described in Chapter Three, livelihoods comprise people, issues relating to their survival, coping strategies and capabilities and means of living including food, income and assets.

Agriculture is a source of livelihoods for estimated 85% of rural poor and provides for 1.5 billion smallholders and landless workers (GCARD 2010). The report maintains that the vast majority of the farmers in the developing world are smallholders and an estimated 85% of them are farming less than 2 hectares (ha). Many countries of the developing world, based on theories emanating from organizations such as the World Bank that small holder farming is inefficient, backward and resistant to change have tried to promote large-scale farming, but this experiment has clearly shown that this was not sustainable and sometimes even disastrous (ibid). Therefore, promoting integrated farming and non-farm livelihood system for households to meet their income and food needs is imperative for poverty reduction.

Closest to the people at the centre of the framework are the resources and livelihood assets that they have access to and use (IFAD 2010). These include natural and non-natural resources, technologies, skills, access to education, health, sources of credit, networks of social support and access to infrastructure. The extent of their access to these assets is strongly influenced by their vulnerability context (ibid). The vulnerability approach is used to define and categorise households into groups based on the degree of vulnerability.

Farm and non-farm sources are the main sources of livelihood activities, which determine what people have access to and what they have not. The vulnerability approach was used to explore the study area by grouping households into three vulnerability groups and later into sub-groups which were regressed to give more insight into all categories of households identified within the study population. The vulnerability factors considered in this research include: food consumption expenditure (food security), land ownership and farm size (assets), education (human capital) and household income (farm and non-farm income).

The review of literature showed that subsistence farming is associated with why households in rural villages of Africa are trapped into low income and poverty and have some of the lowest entry constraints among rural livelihood strategies (IFAD 2009c). Also, lack of land is a major contributor to subsistence farming in Africa, where land has been subjected to fragmentation due to various factors as population increase, tendencies to sell farm land to raise extra capital for family needs and poor land reforms (ibid).

4.1 Food consumption expenditure patterns

Food insecurity exists according to the Food and Agricultural Organisation (FAO) when people lack access to sufficient amounts of safe and nutritious food, and therefore are not consuming enough for an active and healthy life. This may be due to the unavailability of food, inadequate purchasing power or inappropriate utilisation at household level (FAO 2009). Among the eight United Nation Millennium Development Goals, Goal one focuses on eradication of extreme poverty and hunger. Food security is the first motives why people diversify their income activities so as to reduce risks and guarantee a steady flow of income.

Food consumption expenditure patterns in terms of monetary value were collected during the household field survey and used to assess inequality of food consumption, expenditure and income. This method was adopted from FAO consumption data collection as used in the National Household Income and Expenditure survey (NHS) which collects data on food consumption and expenditure patterns to measure food insecurity (FAO 2011).

Farming is the primary source of food needs in this area. However, farming is done on a subsistence level; hence barely enough food is produced to meet the basic consumption needs of households. This is because about 80% of the study population farm between 1.0 – 2.0 hectares of land. Continuous cropping is also carried out on the same plots of land, thereby reducing soil fertility and leading to decreasing yields. In addition to this, these farmers lack capital needed to buy modern equipment and fertilizers which can increase productivity. Farming also depends on rain-fed agriculture due to lack of irrigation systems, making production and output seasonal. As a result of these problems households have to consume a greater part of what they produce and spend a lot of extra capital earned through non-farm income in order to supplement the consumption needs of their family.

About 41% of households stated that their sole aim of farming is to feed their household. The importance of farming to rural livelihood cannot be underestimated. Agriculture serves as

means of fulfilling income and nutritional needs of majority of households in rural areas where other forms of income generating activities remain minimal or non-existence. As reported by Fabusoro *et al.* (2010) in their study of rural livelihood in Ogun State, Western Nigeria, the reason why rural people continue to engage in farming activities despite low income is so that they will be able to have food to eat and be able to feed their family.

During the survey, households were asked to recall the amount of food crops they harvested and how much was consumed weekly by them. The market price was taken and added to any other amount they spent to supplement their own food as food consumption expenditure. A similar approach was used to take livestock and non-food consumption expenditures. Classifying households into lower, middle and upper consumption expenditure groups (Table 4.9), the research found that 63.3% of households were depending on a weekly food expenditure budget of less than 10000 naira (high vulnerability), 29.5% on 10,000 – 15000 naira (moderate vulnerability) and 7.2% on over 15000 naira (low vulnerability).

Considering that the average family size was 10.35 and about 78% of the households have about 4 – 12 family members, consumption income levels seemed too small to take care of quantity and quality of food in terms of good dietary needs. Measurement of food expenditure or intake was not a simple task during the household survey. For instance, it was difficult to measure the amount of calories consumed or assign prices to certain items such as self-collected water, food given as a gift, own domestic equipment, self-collected fire wood and charcoal; hence these were not included in the estimates of consumption expenditure.

4.2 Land as an asset and factor of production

Farming is practiced by the majority of the households on a small-scale (less than 2.0 hectares) and there are only a few commercial farms in the study area. As noted by Fabusoro *et al.* (2010), this is primarily due to three production factors – land, financial capital availability and poor access to market. The notion of livelihood security places considerable emphasis on ownership or access to assets that can be put to productive use by households. The distribution pattern of land owned in the study area showed mean sizes of 2.45 hectare in 2009 and 2.81 hectares in 2005. However, the study found that the majority of households were unable to put into productive use the land they own, only cultivating small portions of it.

Analysis of data collected on land ownership showed that there was an increase from 56% of households in 2005 to 66% in 2009 of small-farm size ownership (0.1 – 2.0 hectares) and a

decrease in large-farm size (3.0 – 6.0 hectares) from 43% in 2005 to 33% of households in 2009. Farm size (amount of farm land used for farming) followed a similar trend with small-farm size holders increasing from 75% of households in 2005 to 79% in 2009 and large-farm size holders decreasing from 25% in 2005 to 21% of households in 2009 (Table 4.1).

These findings are consistent with those reported in the literature on the state of agriculture in Nigeria. For instance, Fabusoro *et al.* (2010) noted that about 90 percent of Nigeria's food is produced by small-scale farmers who cultivate small plots of land (0.1 – 2.0 hectares) with crude implements and depend on rainfall rather than irrigation systems.

Analysis of sizes of land put into productive use between 2005 and 2009 showed that households were unable to fully put into productive use the land they owned (Table 4.1). This was due to some factors such as lack of financial capital, high labour cost, participation in non-farm businesses and poor access to market caused by remoteness. There is evidence of declining productivity in farming in these villages as the area of land owned remained greater than the size of land cultivated over the past five years. Also average land sizes for both land owned and land used for farming have been on the decline over the past years. The average land area actually used for farming was 2.08 and 1.96 hectares in 2005 and 2009 respectively.

In contrast, participation in non-farm employment grew over these years; from 11.3% of households in 2005 to 27.5% in 2009 (Table 4.2). It shows that while agricultural production was on the decline, self-employed non-farm employment was on the increase.

Table 4.1 Distribution of land owned and farm size (2005 – 2009)

Size in Hectares	2005		2009		2005		2009	
	Land owned		Land owned		Farm Size		Farm Size	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
1.0	3	1.3	3	1.3	57	23.8	80	33.3
2.0	131	54.6	156	65.0	124	51.7	111	46.3
3.0	51	21.3	59	24.6	47	19.6	33	13.8
4.0	29	12.1	15	6.3	7	2.9	15	6.3
5.0	19	7.9	7	2.9	4	1.7	1	.4
6.0	5	2.1	-	-	1	.4	-	-
7.0	1	.4	-	-	-	-	-	-
8.0	1	.4	-	-	-	-	-	-
Total	240	100.0	240	100.0	240	100.0	240	100.0
Mean	2.81		2.45		2.08		1.96	
Sum	674.0		587.0		500.0		473.0	

Source: Household survey data

Land availability to rural households is a very important factor in increasing food production and household income required for sustainable livelihood, since agriculture is the primary source of food and income of rural people in Nigeria. The Land Use Decree by governments has wider implications in terms of access to land and food production. According to Stephen and Lenihan (2010) rural people are mostly disadvantaged by the unfavourable Land Use Decree of 1978 throughout Nigeria.

Farm land is mostly acquired by inheritance in the study area as reported by 45% of households; through purchase 11%; and community allocations 10%. The remaining 34% of households secured their land through a combination of inheritance, allocation and purchase. The inheritance tradition does not favour equitable land distribution among household members as the bulk of the land goes to the eldest son and younger members need to find new land themselves. Also women are excluded from the inheritance process.

About 78 percent of respondents stated that land ownership and access was an obstacle to farming while 22 percent did not think land posed a problem to farming in this area. In terms of problems posed by the cost of land, 88 percent of households stated that cost of land was a problem to farming while 12 percent thought otherwise. In contrast, only about 36 percent of respondents maintained that cost of land can be an obstacle to non-farm investment while 64 percent reported that cost of land has no such influence in non-farm business investment.

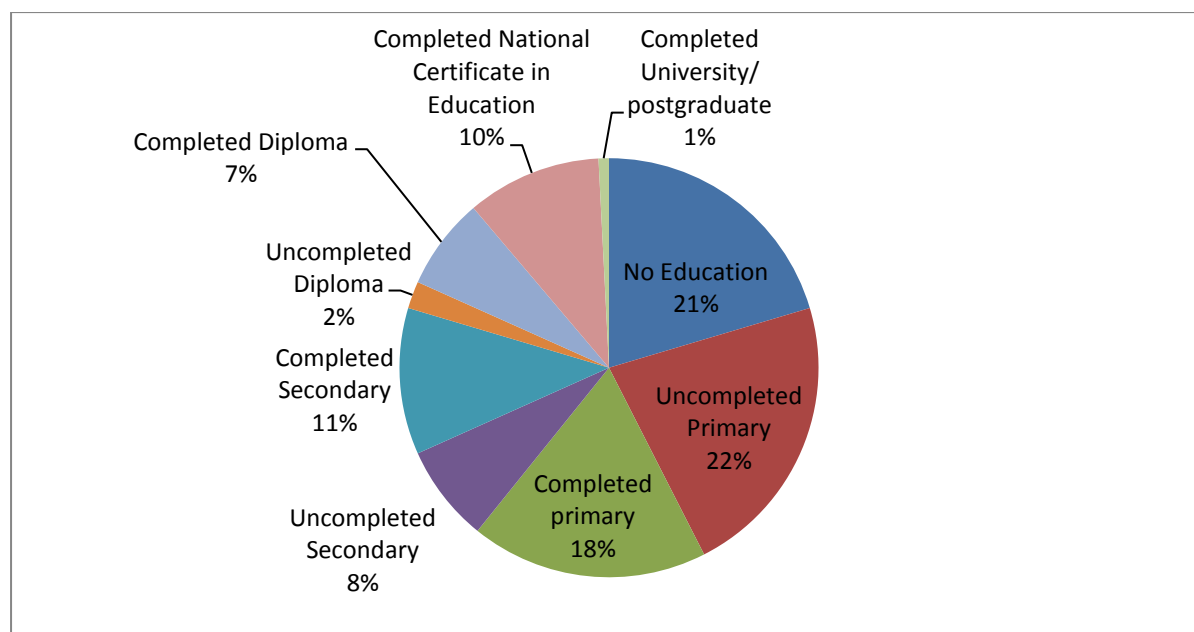
Another important feature of land is its capacity to be used as collateral for credit and loan procurement. Rural land lacks the legal title and value which can meet the conditions needed by financial institutions concerned with administering loans and credit for business investment. Therefore, the rural poor are not able to use the land available to them to apply or secure loans to increase productivity or investment in both farm and non-farm sectors. Nearly 76% of households could not use their land as collateral to apply for loan, while only 24% of respondents could use their land as collateral. Ownership of rural land is sometimes tied up by family heritage and custom which makes it difficult for land to be transferred from one person to another. Access to land is a very important aspect of rural livelihood.

4.3 Education (Human capital)

Education and skills are often the most valuable resources for rural people to pursue opportunities in modern agriculture, obtain wage employment, start businesses in the non-farm enterprises, and migrate successfully for the high paying urban jobs (World Bank 2008).

Education attainment among head of households (Figure 4.1) showed that about 43% either never attended or could not complete primary education. About 26% had completed primary but had uncompleted secondary education, 13% had secondary/uncompleted diploma education while only 18% obtained a higher educational qualification.

Figure 4.1 Education Levels of heads of household



Source: Household survey data

Education is a very important factor in the rural poor's access to a secure livelihood and welfare. People with higher education are more likely to participate in wider employment opportunities offered by the non-farm and urban sectors (World Bank 2008). This situation is being recognised now by a majority of rural households as there is increasing awareness now to save to pay for children's education as a strategy to escape poverty in future. In terms of years spent in education, the survey found that the mean years of education was 6.89. The low level of education observed in these communities is one of the factors determining the type of employment engaged by the majority of household members. Farming will certainly remain the primary occupation these communities have to depend on to make a living.

What are the reasons behind the majority of this population not achieving high educational attainment? About 46% of head of households attributed their inability to progress their education to financial difficulties, 23% did not know the importance of getting educated and 10% reported it was due to participation in family farm and non-farm work. About 13% of

head of households maintain that their parents were to be blamed, while about 8% stated that it was due to lack of government support that they could not further their education.

Distribution of households according to vocational and apprentice training received followed the same pattern as educational attainment. Only 48% of the population undertook some form of training or apprenticeship, while 52% did not. The three main areas in which training was received were technical work, building work and trading. Lack of skills has been given as the main reason why the majority of the rural households are poor (for example, Kusters 2010).

It has been observed that there is low educational attainment among young people in the rural villages. Low level education and lack of skills contribute to the high rate of unemployment. About 53% of the households had 1 – 2 members aged 16 years and above and another 13% of the household had 3 – 5 members who had not completed primary education. These are adult members of the families who could not attend or complete primary education.

Low education attainment in rural villages adversely affects agricultural productivity as well as non-farm activities. Since most people are uneducated, the majority of available labour remains unskilled, which does not lead to improved productivity and higher output in these sectors. Education plays an important role in enabling individuals to become engaged in non-farm employment, as several non-farm jobs demand a minimum level of education. Also, there is the trend for educated young and unmarried men to move to the city to find work. As soon as they complete secondary education, they move to the city to undertake higher education or look for employment, leaving the rural area with scarcity of agricultural labour.

4.4 Age, gender and household size

4.4.1 Age

The mean age of head of households was 53 years. Analysis of the age group distribution within the sample population showed that 8 percent of respondents were 30 – 40 years, 70 percent were 41 – 60 years and 22 percent of head of households were 61 – 80 years. Given other characteristics observed from this population such as family history and educational level, it is certain that the majority of this population will be remaining in farming and living in their current communities for a long period of time or even throughout their life time.

It is obvious that the younger and better educated have a greater tendency to engage in non-farm work or migrate in search of non-farm employment. This view is shared by other authors stating that age in some instances could be a determinant entry criterion for some

livelihood income activities (Fabusoro *et al.* 2010). There is the likelihood that since the majority of households has a higher percentage of head of households in the range of 41 – 60 years; farming will continue to be the most important source of livelihood survival in these communities, while non-farm activities will be playing a complementary role as a source of extra income.

4.4.2 Gender

The sex distribution of respondents showed that 92 percent were males and 8 percent were females. Ninety-two percent of head of households were married, while 8 percent were either separated or widowed. Also, 56 percent of the respondents were born within the village in which they currently live, while 24 percent came from another village and 20 percent were born in cities and later left the cities to live in their present communities.

The criteria for participation/selection for interview were based on head of households. In these farming villages (as in the majority of other African rural communities) males dominate ownership of assets, leadership of households and participation in livelihood activities and formal employment. Low representation of women as heads of households could be related to strong cultural and traditional values within these communities, which tend to exclude women from major responsibilities such as land ownership, governance and being head of a household.

It has been reported that exclusion affects all categories of women; married, divorced or widowed, which translate to little or no access to assets of production and decision-making (Stephen and Lenihan 2010). The authors observed that culturally defined gender-based divisions of labour do prescribe certain high-return activities for men and low-return occupations for women, thereby creating gender-based inequalities in livelihood opportunities and constraints (*ibid*).

4.4.3 Household size

The mean size of household was 10.4 while the mean number of males and females were 5.4 and 5.0 respectively. A more detailed analysis of the households showed that only about 4.2% of the household had 1 – 5 household members while 83.5% of the households had about 6 - 15 members, the remaining 12.3% of households had more than 15 members. The reasons behind the high incidence of larger size households can be attributed to the tendency to have more household members who can assist in farming (since this region is a highly

agrarian zone). Several authors (Rahman 1999, Fabusoro *et al.* 2010) have previously noted that a large household is likely to have more diversified income sources if it has some or all of its members working and contributing income to their households.

Despite the large household size only about 67% of the households have 1 – 2 members aged 18 years and over in employment and about 33% have about 3 – 5 members in employment (either farm or non-farm). Similarly 63 percent of households have 1 – 2 members and 23 percent have 3–5 members aged 18 years and over not in any employment. This implies that unemployment rate is high within these communities.

Agriculture cannot provide employment to all household members and non-farm jobs are very few to absorb all the young men and women who live in the rural villages. In most cases, government agencies offer the most sources of employment opportunity since there are few industries and private companies to cater for unemployment. This underlines the need to promote rural policies that encourages the development of rural enterprises to cater for employment.

4.5 Employment and occupation

People change occupation or employment at different times depending on conditions such as skills and educational attainment, financial capital and land availability and personal needs. Empirically, there is not much data to explore this or distinguish the various changes over the years in Nigeria where there is only little information collected at rural level on livelihoods.

Analysis of data collected for this research showed that there were changes in employment and occupations over time. There was a decline from the number of people in charge of farm work as primary employment from about 51% of head of households in 2005 to about 38% in 2009. There was also a decline in people who combine salaried job and agricultural paid employment from about 9% to 3% but an increase in people engaged in salaried job and own non-farm activity from 1% in 2005 to 10% in 2009 (Table 4.2).

Farming as sole occupation was on the decline (51% in 2005 and 38% in 2009), while participation in non-farm activities was on the increase in every criteria considered. The proportion of households combining ownership of both farm and non-farm activities have been on the increase over the years. It was found that the number of heads of household engaged in both activities has more than doubled in 2009 when compared with 2005 (11.3%

in 2005 and 27.5% in 2009). This diversification trend could be survival driven (distress-push) or opportunity driven (demand-pull) as explained in Chapter Two.

Table 4.2 Heads of household Primary occupations (2005 – 2009)

Type of Occupation by Head of Household	Frequency 2005	Percent 2005	Frequency 2009	Percent 2009
In charge of farm work only	123	51.1	90	37.5
In charge of non-farm work only	13	5.4	15	6.3
In charge of both farm and non-farm work	27	11.3	66	27.5
Both farm and non-farm paid labor jobs	51	21.3	38	15.8
Salaried job and farm work	22	9.2	7	2.9
Salaried job and non-farm business	3	1.3	24	10.0
Other jobs	1	.4	-	-
Total	240	100	240	100

Source: Household survey data.

Several factors were responsible for the changes in occupation and employment. The main factors include receipt of extra capital for investment (25% of head of households), to earning more income and wages (22% of respondents), lack of capital for further investment (14%) and lack of land, reported by 13% of households. The majority of the households have their farm and non-farm businesses located within the villages in which they reside. About 60% and 89% have their farm or non-farm businesses located in the villages in which they resided in 2005 and 2009 respectively. Only few heads of household (about 11% in 2009) earned their income from nearby villages or cities in addition to farming in their villages.

There were variations in wages and earnings from paid farm and non-farm labour. Analysis showed that households employed in farm work tended to earn lower income than in non-farm. The mean daily payment received from farm employment was 1634 naira while non-farm wages was 2090 naira. A further analysis of farm and non-farm wages across the population showed that while about 74% of respondent's expected daily farm work earnings ranged from 1000 – 2000 naira, about 60% of the population earned similar wages in non-farm paid work.

However, for an income range of 2001 – 3000 naira, only 17% of respondents reported that they had earned that in farm paid employment. Whereas, 30% of households reported that they had earned the same income range in non-farm paid employment. The examination of various income sources and levels suggests that people derive more income from non-farm or when they combine both farm and non-farm activities.

Table 4.3 Employment by sector and changes over 5 years

Employment by sector	Main employment in 2005 (Percent)	Secondary employment in 2005 (Percent)	Main employment in 2009 (Percent)	Secondary employment in 2009 (Percent)
Agriculture/farming	61.7	32.1	58.3	35.0
Manufacturing	7.1	22.1	12.9	25.4
Construction	3.3	10.4	-	10.0
Mining	3.3	.8	.4	.4
Technical or services	4.2	12.1	3.8	12.9
Merchandise or trading	7.5	7.9	6.3	6.7
Transportation	.4	.4	-	4.6
Craft	2.9	2.9	7.1	2.1
Public service jobs	9.6	3.8	9.5	.8
Other jobs	-	7.5	1.7	2.1
Total	100	100	100	100

Source: Household survey data

Agriculture is the primary sector that provides employment in the study area. Nearly 59% of the population rely on agriculture as their main employment sector and about 35% regard agriculture as their second main employment sector in 2009 (Table 4.3). In 2005, agriculture was the most important sector for about 61% of the households while 32% regarded the sector as their second most important sector. Manufacturing, technical services and construction (in the non-farm sector) was classified as secondary employment in 2009 for 25%, 13% and 10% of households respectively. In 2005 manufacturing, technical services and construction made up secondary employment for 22%, 12% and 10% of households respectively.

Household labour accounts for the majority of labour used in farm and non-farm businesses in the study area. It was observed that the need to have more hands available as part of family labour led to large household sizes. The mean value of household adult labour working in the family farm was 3.4 persons. About 37% of households had 1 – 2 members and 51% had about 3 – 5 members working on the family farm. It was observed that there is the belief among households that bigger families have the capacity to diversify into farm and non-farm activities since there are more people to participate in the various activities.

4.6 Diversification trend

Employment is an important aspect of rural livelihoods. Different farm and non-farm activities at household and individual levels determine access to means of livelihood and

income. From the livelihood structure adopted, seven groups of activities were identified as the bench mark for income sources classification as in Table 4.4. This is in accordance with the classification identified by other authors (Ellis 2000, Fabusoro *et al.* 2010, Stephen and Lenihan 2010). These authors described rural livelihoods as being composed of assets and activities that generate the means of household survival. These activities are divided into natural and non-natural resources.

It was observed that different livelihood activities cut across the communities and also varies from individual to individual, household to household and from community to community according to the goals, resource base and capabilities of households. These outcomes and goals are subject to changes from time to time depending on economic, natural and political conditions prevalent at any given time. While farming constitutes the main activities in this area, it is seen mainly as a form of employment for the older and uneducated people.

Younger people and educated youths tend to stay-away from farming activities, thereby leaving only older men, women and children to engage in farming activities. Land ownership trend is another contributing factor, which tends to leave land to senior or older male members of the households. Younger people who want to participate in farming but lack the financial capital required to buy farm land can only wait and hope to inherit some portion of land when their parents die.

Younger people tend to seek non-farm employment in the rural towns or in nearby or distant cities where jobs such as trading, building construction, quarry and motorcycle or tri-cycle transportation provides immediate employment. Processing and marketing of farm produce are the most common activities men and women take to during the off-farm seasons. The study observed that diversification trends among households is a strategy undertaken with the intention of having sources of income throughout the farming and non-farming seasons. Table 4.4 explains the various farm and non-farm activities in the study area.

Nearly 68 percent of households operated or diversified into non-farm businesses. All the households reported non-farm income for the survey year either in employed activity or participating part-time when not in farming work. Rural people combine a range of activities to make a living since barely any household was found to depend on one activity but used a host of activities and opportunities offered by farm and non-farm sectors. A list of livelihood activities which various household members undertake and recorded in the study area is presented in Table 4.4.

Table 4.4 List of Livelihood activities in the study area

Employment categories	List of income-based activities
Own agricultural activities	Arable/cash/vegetable farming Tree crops – mango and oranges, pears Livestock – goats, sheep, chicken, cattle, pigs Fishing and hunting
Off-farm/agricultural-based activities	Paid or unpaid agricultural labour jobs Cassava, beans and oil palm processing Maize and rice processing Grinding of pepper, melon, crayfish, etc
Non-farm local activities	Motor/motorcycle/tri-cycle transportation Carpentry/furniture making Tailoring/shoe making Mechanic/electrical work Welding &vulcanizing Traditional medicine/chemist Rentals/phone call/business centers Motorcycle/bicycle repairing Barbering/hair/beauty salon Blacksmith Administration/Teaching/Clergy work Butchery
Trading/merchandise	Petty/commodities trading Sale of processed farm products Sale of used clothes and shoes Restaurant/ beer parlor Food/water/drinks/alcohol vending
Local formal employment	Unskilled labour jobs Skilled jobs
Mining and construction	Small-scale mining/earth work Construction/building work Bore hole/well drilling
Migratory services	Unskilled/skilled manual or formal wage jobs

Source: Generated from Household survey.

Why do people continue to engage in farming activities despite high involvement in non-farm activities? First, farming in these rural communities for the majority of the households was not primarily a means for wealth generation or profit making but as a source of food. Some

members of households engage in other sources of higher income such as teaching and skilled jobs but still engage in farming despite low productivity and uncertainty associated with rural farming. About 41 percent of households stated that their aim in farming was to feed the family; 24 percent had it as a main source of income; 25 percent reported that farming serve as an extra source of income support; while only about 10 percent engage in farming to accumulate wealth. This accounts for the reason why rural people will never leave farming even if they make higher income from non-farm sources.

The primary reason for farming is to provide food for household consumption. This finding is consistent with that of Fabusoro *et al.* (2010) in study of livelihoods in Ogun State, Nigeria. The other reasons include “the relatively high cost of purchased food, drastic cutbacks in government social service and declining value of ex-migrant workers’ pensions which made village life and agrarian livelihood a vital refuge; and people’s attachment to the cultural values of their agrarian ancestors” (ibid: 428).

Land availability and financial capital are the main determinant factors for entry into the farm sector, while in the non-farm sector education plays a major role for entry. Hence, as long as people have access to land and financial capital, they will continue to be involved in farming despite keeping other employment in the non-farm sector. In the non-farm sector, the less educated are more likely to be employed in unskilled manual jobs while the more educated are more likely to be employed in better jobs such as administrators, teachers and directors.

4.7 Rural Non-Farm sector

The rural non-farm sector represents micro-small enterprises that have resulted from economic transformation and development process in the rural areas. It includes several activities in the processing, agro-enterprises, small-scale manufacturing, trade, skilled and unskilled services, and other opportunities that exist in the local areas.

4.7.1 The Non-farm activities

The non-farm sector serves as a main source of family income for about 47% of households and as a source of extra income for about 53% of households in the study area. In monetary terms, farming constitutes about 56% while non-farm activities contribute about 44% of overall household income. Several authors have found that non-farm diversification is crucial to reducing poverty for rural subsistent farmers in Africa. In most cases about 40% of

household income is derived from non-farm sources (Barrett *et al.* 2001) and sometimes up to 55 – 80 percent (Bryceson 2000) and about 69 percent (Fabusoro *et al.* 2010).

This study found that nearly 78% of respondents participate actively in non-farm employment. However about 68% of respondents own, operate or have diversified into a non-farm business. This sector also provides employment for the majority of landless young men and women and family members who do not want to engage in farming as a means of livelihood. Of the various non-farm activities, production and processing was undertaken by 48% of households; trade and merchandising (30%); services (14% of all the respondents) and 8% of households were engaged in other non-farm activities.

Off farm processing activities and trading offered the most sources of non-farm employment in most of the study locations. Processing activities involve cassava, rice, palm oil and wild fruits preparation in order to produce edible products which are either sold for income or eaten by households. Other by-products of the rural economy include: basket, brooms, pottery, weaved cloths, wood carvings, blacksmith, traditional medicine, palm wine, gin, tobacco and carpentry.

Non-farm local activities involve manufacturing and service-oriented livelihood activities that rural people undertake within rural communities. They include: building and construction work, bicycle repairing, motorcycle repair, electrical work, traditional medical treatment, retail, hair salon, etc. These services require some training and skills as a condition for entry and it was found that only 23% of respondents had acquired industrial or entrepreneurial skills. It was found that women dominate trading of commodity and farm produce in these communities. Food processing and agricultural produce trading are mainly carried out by women and it provides income throughout the seasons to support agricultural income.

Local formal employment takes the form of full-time or part-time employment and can be permanent or temporary, providing wage income. Employment opportunities include teaching, health care, office administration and agricultural extension, among others. Nearly 22 percent of heads of household reported that they were employed in non-farm formal wage employment in addition to participating in own farm and non-farm or other hired labour activities.

Natural resources and mining activities also provide employment for local people. Such activities include hunting, timber, wild fruits, river sand dredging, stone and fire wood

gathering. About 67% of households engage in some natural resources activities while 33% of families do not. Among the activities, forest timber and wild fruit provided some livelihood sources for 44% of respondents, water, river and dam 14% and about 8% of households engaged in gathering of sand, stones and rocks.

There was not a lot of fishing activity in this area due to the lack of big rivers but still around 12% of households engaged in fishing activities either as a source of extra income or to meet the nutritional needs of their family. Forests provide the major source of fire wood for cooking, timber for building houses and wild fruits for consumption or for sale at certain seasons. It was observed that poorer households more often than the wealthy depend on natural resources to substitute for their consumption or financial needs when farming income could not provide enough.

4.7.2 Financial capital

One of the major factors affecting the rural economy is lack of financial capital. Income used for start-ups and working capital serve as an important source for both farm and non-farm growth. It was observed that farm income is an important source for starting up non-farm business and also income from non-farm sources provide extra income for expansion of the farm production. IFAD (2009b) note that raising capital to start farm or non-farm activities can be a daunting task in rural areas, where personal savings serve as the most important source of financing.

In monetary terms 28 percent and 30 percent of households started farming with about 31,000 – 50,000 and 51,000 – 100,000 naira respectively but only about 13 percent and 17 percent of households used this capital range to start-up a non-farm business. This is because less capital is needed to start-up non-farm businesses unlike farming, which requires more capital investment (to buy land and other inputs). IFAD (2009b) note that non-farm activities require little capital and generate more employment per unit of capital than farm activities do and they are quite suited to a poor household's requirements.

The four most important sources of start-up capital for farm businesses among households (Table 4.5) were income from parents or remittances from migrated family members (about 25% of the household) and income or savings from non-farm work or business (22%). Other sources were sale of land and other family assets (18%) and income or savings from farm work (about 12% of households).

Table 4.5 Start-up sources for farm and non-farm activities

Sources	Farming		Non-farm activity	
	Frequency	Percent	Frequency	Percent
Income or savings from farm work only	28	11.7	70	29.2
Income/savings from non-farm work or trading	52	21.7	39	16.3
Income/savings from both farm and non-farm	28	11.7	50	20.8
Income/savings from salaried work only	16	6.5	31	12.9
Money from formal money lenders or banks	10	4.2	-	-
Capital from parents or remittances	59	24.6	20	8.3
Sale of land or other family assets	44	18.3	17	7.1
Not applicable	3	1.3	13	5.4
Total	240	100.0	240	100.0

Source: Household survey data

Sources of start-up capital for non-farm businesses slightly differed from those for farming (Table 4.5). About 29% of households reported to have set up their non-farm businesses from income from farm work. Income or savings from both farm and non-farm work accounted for about 21%, while income or savings from non-farm work (16%), and income or savings from salaried work account for 13% of all respondents. Capital from parents or remittance and sale of land or assets provides start-up capital for non-farm businesses for only about 8% and 7% of the households respectively. Loans from formal money lenders was not a widely reported source of start-up funds for non-farm businesses but about 4% of households rely on this source to set-up farm activity. About 33% of households setup their main non-farm business by themselves, 16% inherited, while only 9% bought their businesses when they started.

Rural finance is considered by IFAD and World Bank as a vital tool in poverty reduction and rural development. According to the World Bank (2008), rural farmers are often excluded from credit facilities which are necessary for growth of the small and medium enterprises. This is because they are unable to meet the conditions needed to access such facilities from financial institutions. As a result, households in rural communities depend heavily on informal lenders for their financial needs.

Several authors maintain that empowering small-scale farmers, landless people and rural women to generate sustainable incomes from farming and other non-farm activities through micro-credit could have multiple effects on poverty reduction and rural development. Experience has shown that direct access to financial services affects the productivity, asset formation, and income and food security of the rural poor (IFAD 2004, World Bank 2008).

Analysis of household data reveals that about 63% of households applied or wanted to apply for loans but only about 52% eventually applied for a loan in the past 5 years. Of these 52% respondents, 37% applied for a loan from informal sources - local money lenders, cooperative societies and money contribution associations. This implies that only about 16% of households were able to apply for loan through formal credit institutions – agricultural or cooperative banks (14%) and micro-finance banks (2%) respectively. The purposes of the loans included – purchasing equipment, land, raw material and labour cost.

Several reasons were identified as to why nearly half of the population could not apply for loan. The reasons ranged from high interest rate, non-availability of financial institutions in local areas, lack of knowledge on how to apply and inability to meet collateral requirement. Access to loans is a major obstacle that faces rural people in Nigeria. According to the CBN (2007), the economy's vibrant informal sector employs over 70% of the population and has 80 million micro entrepreneurs, who do not have access to financial services.

This study also reveals that out of the 52% of households who applied for a loan, 41% were able to secure the loan while 11% could not. Reasons given for not approving the loan were lack of collateral, not enough capital and lack of trust. Timing is another factor associated with problems of rural financing. It takes too long to approve and to disburse loans to rural people. In most cases farmers receive the loan too late for the operations for which they would have put the money into use. For instance a farmer could be waiting for a loan to buy fertilizer; by the time he/she gets the loan it may have passed the time needed to apply the fertilizer, making the loan useless. The period also given for loan repayment sometimes is so short that people are discouraged from borrowing. For instance, the study found that 36% of households that secured loans were given between 1 – 6 months for the repayment.

Another crucial factor is the amount of capital received as a loan. In most cases the loan is short of the actual financial need or too small to fully finance any meaningful business investment. Of the 42% of households that were granted a loan, only about 18% received 81 – 100% of the amount they expected to receive. Seventy percent of households had no access to formal financial services in their locality, while about 75% of households reported that they do not have enough information on how and where to apply for loan/credit. Most of the households (about 68%) did not operate a bank account.

4.7.3 Entry, exit and constraints affecting operation of rural non-farm businesses

Several factors affect households take up and operation of non-farm businesses. Four factors feature prominently from this survey as the most important constraints affecting operation of non-farm. The factors include - lack of capital (39%); lack of access to loan facilities (20%); lack of access to electricity (19%); and poor access to market and information (11% of households). Further analysis showed that the second most important constraint reported by households was low demand for goods and services (17%) and the third most important constraint was poor road quality affecting 29% of households. For those who are not operating non-farm businesses, lack of start-up capital and lack of access to loan facilities were reported by 13% and 14% of households respectively as the main and secondary barrier/constraint to starting a non-farm business. Low demand for goods and services is the third most reported factor by households as a barrier to starting a non-farm activity.

At the community level, several factors affect the operation of farm and non-farm activities (Table 4.6). Four factors that featured significantly in farm activities were climatic conditions, reported by 25% of households, high cost of inputs and labour, financial capital, availability and high cost of land. For non-farm, the main factor affecting rural businesses is also climatic conditions (Table 4.6). This is because when farming is affected by poor climate conditions, it has an indirect influence on non-farm activities.

Table 4.6 Factors affecting rural farm and non-farm businesses

Factors	Farming activities		Non-farm Businesses	
	Frequency	Percent	Frequency	Percent
Prices received for goods and services	29	12.1	40	16.7
Prices paid out for goods and services	20	8.3	32	13.3
Climatic conditions	60	25.0	60	25.0
High cost of inputs and labor	40	16.7	22	9.2
Land availability and costs	30	12.5	14	5.8
Level of infrastructure	20	8.3	29	12.1
Subsidies and grants	8	3.3	4	1.6
Financial capital availability	33	13.8	39	16.3
Total	240	100	240	100

Source: Household survey data

Diversification is a livelihood strategy among rural people in response to rural economic conditions. Entry and exit of activities is also common among rural dwellers as they intensify efforts to make a living out of the opportunities available to them. Decision and choice of

activity, trade or business on which to embark varies from one person to another and from one household to another. However, the four most reported influences on what activity to start among households were: having the knowledge and skill required; family and friends advice; parents or family line of business; and existing or new market opportunity. The decision to quit any activity or business is influenced by multiple influences or factors. Five factors were widely reported by households as affecting their decision to quit any activity. These are competition, new market opportunity, lack of market, lack of skilled labour and high losses or low profit. These factors are also causes of business failures.

4.7.4 Ownership and management of non-farm activities

Most of the non-farm businesses were in sole or family ownership (51% of households) and only 17% of household businesses were jointly owned, while 32% of respondents do not currently own a non-farm business. Women dominate non-farm activities, especially commodity and food marketing, in addition to assisting in farming and domestic work. Farmers' wives were in charge of 65% of household non-farm businesses or trade, only 35% of households had their non-farm business operated by men (head of households).

Only about 20% of households had their non-farm business activities registered with the government. The reasons given for not registering their businesses with government range from lack of knowledge on how to register, registration not required, registration cost too high and in order to avoid taxation. Of the non-farm businesses 50% of the household were engaged in trading, manufacturing/production (37%) and services (13% of households).

One important feature of non-farm activity is that it can provide employment all year round to rural households unlike farming which is seasonal in output. However, non-farm businesses face competition from many sources. Fifty percent of respondents stated that their businesses were being affected by competition from local firms, public firms and from foreign firms.

The reasons given why businesses were less competitive ranged from product quality, lack of machines and equipment, location, better distribution and better prices. Goods produced in rural areas are considered inferior to industrial goods and as a result attract lower prices than industrial goods. However, despite these conditions, local products are highly demanded by the poor households who cannot afford the more expensive industrial goods.

4.8 Social organisation

Co-operative societies has become one of the means in which individuals or households choose in order to minimise the constraints posed by limited access to financial services in rural and urban sectors communities. Salahu and Oyegbami (2010) provide two definitions of co-operatives that apply to African situation: “A cooperative society is an association of persons usually of limited means who have voluntarily joined together to achieve a common economic end through the formation of a democratically controlled business organization, making equitable contribution to the capital required and accepting a fair share of the risk and benefits of the undertakings”.

Second, “as a socioeconomic association of human beings who have come together voluntarily for the purpose of solving their common economic and social problems on democratic basis” (ibid: 37). The authors maintain that it serves as a forum in which individuals come together, pooled their resources in order to achieve economic or other objectives, which if done individually and independently the resources will be beyond their reach. They further state that in cooperative societies, people voluntarily associate together on the basis of equality for the promotion of their economic, social, educational, cultural and spiritual interests, thus making cooperative a very reliable trustee.

One of these co-operative associations making huge impact in Nigerian rural and urban communities is Rotating Money Saving and Credit Associations. Often referred to as Thrift or Esusu in Nigeria (Susus in West African countries), they represent informal or pre-microfinance associations. This is association of individuals who agree to meet for a defined period in order to save and borrow together. It is an informal arrangement often regarded as the poor or low income people’s bank, where money is not saved for long but changes hands rapidly, satisfying both investment, consumption and production needs.

Meetings can be regular on monthly basis or tied to seasonal cash flow cycles in local communities. Every member contributes the same amount at each meeting, and one member is nominated to takes the whole sum once. As a result, each member is able to access a larger sum of money during the life of the association, and use it for whatever purpose she or he wishes. This method of saving is mostly popular among rural people since it reduces the risks of saving at home, where there are no banking services and family or relatives may demand access to savings. It offers simple administrative and control procedures since every transaction is seen by every member during the meetings. Also, since no money has to be

retained inside the group, no records have to be kept and the risk of misappropriation of fund is greatly minimized. Each member receives at least once the amount collected. This reduces the size of the loss, should someone take funds early and not pay back. The association is usually short-term (usually between 6 – 12 months). These characteristics make the system a model of transparency and simplicity that is well adapted to communities with low levels of education and weak systems for protecting and enforcing collective property rights. It has proven a popular means for increasing and providing individual or household with huge capital for investment.

About 90% of households belong to one or more social organisations. The various organisations that featured prominently were town/village unions, social club, Money Rotating, Saving and Credit groups, and other organisations. The majority of these organisations (64%) were formed by the people themselves which underline the desire and efforts of households to bring resources and ideas together in order to improve their livelihood and welfare. Only about 8% of respondents belong to organisations formed by government while about 28% of households were members of organisations formed by local leaders. It was found that men and women belong to separate organisations; because of custom, time and financial reasons. It is difficult for women to keep up the pace required in these areas with men; hence both prefer to belong to separate unions.

The benefits associated with membership of social organisations include: –

- They serve as a means of raising and increasing financial capital through borrowings and loans offered to members;
- Members benefit from free labour on farm or off-farm as members commit time to help and assist each other in both farm and non-farm tasks that require extra hands;
- They serve as a means to secure and distribute food, farm inputs and seeds in times of scarcity or where bulk purchases offer better prices; and
- They assist members in order to benefit from economies of scale as people combine their land and resources together in order to engage in large-scale agriculture or medium scale production and manufacturing.

It was observed that the main target of these organisations is to fulfil food security of its members (through free labour and low interest credit they offer to members) and once this is achieved, other aims are pursued.

4.9 The Rural Business Environment

It is certain that the way rural households construct their living, and the environment surrounding their businesses, differs from what is obtainable in the urban areas or cities. There is lack of public infrastructure such as good roads, electricity supply, markets and communication services in rural areas. Access to information is a major constraint affecting livelihoods and businesses since the majority of these families are uneducated. It was found that the most important sources of market information were educated family members (53% of households). The second and third important sources of market information were local leaders and radio communication system respectively. There is a lack of telephone and internet communication in these villages, while few households could afford televisions.

The majority of these farmers (about 68%) do not have access to extension services and business advisors. Extension services help bring knowledge from modern technology and innovation to rural farmers. Onyeiwu and Liu (2011) maintain that given the lack of access of rural households to modern technologies, agricultural production becomes inefficient and fails to take advantage of economies of scale. Information is an important aspect of rural development as it gives people access to what government is doing, latest technologies and where/when to get better prices for goods and services.

Economic pressures resulting from poorly developed rural policies lead to a harsh business environment and insecure livelihoods according to several authors. Infrastructure and other public facilities are lacking in Nigerian rural villages. Past public legislation in Nigeria, which focused on agricultural development as a means of achieving growth, and rural development policies have not achieved the desired result due to poor policies and implementation (Gaurba 2006). As a result, the rural sector lacks access to good roads, electricity, market, credit and education that affect productivity and well-being.

The study found that sale of assets (mainly land) accounts for greater source of investment as reported by 25% of households in the study area. Other sources of investment includes – income from non-farm work or trade (22%), remittance (19%) and farm income (12% of households). This clearly shows that the three most important sources of investment in rural areas are incomes from sale of land/asset, non-farm activities and remittance. Land could be an important source of increasing financial capital for households who have a large area of disposable land, since such land could be sold for commercial or housing purposes.

The study found that seven factors constitute major obstacles in the rural villages. They include – access to electricity, quality of electricity, quality of road network, micro-financing, collateral requirement and health care (Table 4.7). These are public goods which government has failed to provide but which are needed in order to encourage growth and productivity. In addition to having a pronounced effect on household income, the lack of these things cause additional cost of production which affects prices of goods and services in rural areas.

Table 4.7 Degree of obstacles facing rural businesses

Factors	Percentage distribution of households by degree of obstacle				
	Minor	Low	Moderate	Big	Major
Access to rural electricity	3.3	.8	7.1	3.8	85.0
Quality of electricity	3.3	.4	22.9	22.5	50.8
Access to clean water	-	-	4.6	19.2	76.3
Access to postal services	17.9	23.3	27.5	12.1	19.2
Quality of road network	-	19.2	-	21.3	55.8
Means of transportation	.4	-	44.2	22.5	32.9
Access to micro-financing	.4	-	9.2	10.8	79.6
High interest rate	.4	5.4	34.6	29.6	30.0
Collateral requirement	-	-	9.2	27.9	62.9
Amount of loan received	7.5	15.4	26.3	21.7	29.2
Lack of market information	4.6	13.8	20.4	20.0	41.3
Low demand for goods	1.3	4.6	25.0	29.2	40.0
License and registration costs	29.6	45.4	22.1	2.5	.4
High tax system	27.1	45.1	22.5	5.0	.4
High cost of labour	.4	.4	28.8	35.0	35.4
Availability of skilled labour	3.3	13.8	35.0	21.7	26.3
Land ownership policy	4.6	15.0	24.2	23.3	32.9
Lack of subsidy	18.3	21.7	32.5	19.2	8.3
Price control policy	37.9	46.3	15.4	.4	-
Import and Export policy	27.9	40.8	22.5	5.8	2.9
Food and environmental policy	56.7	42.1	1.3	-	-
Corruption within government	1.7	7.1	22.9	31.7	36.7
Economic uncertainty	.8	31.7	34.2	33.3	-
Crime and social unrest	2.5	5.8	28.3	35.4	27.9
Legal system	16.3	38.8	36.3	5.4	3.3
Health care system	-	-	12.1	34.6	53.3
Gender discrimination	7.5	18.3	31.3	22.9	20.0
General business environment	.4	12.9	34.6	29.6	22.5

Source: Household survey data.

Environmental conditions are the other important factors determining livelihood capabilities in rural areas, since farming still depends on rain fed agriculture. Natural disasters (incidents

of flood, fire, death and illness) are not rampant but there are no insurance provisions to cover such incidents if they occur. The most common disaster or shock encountered in the last 12 months was illness, reported by 34% of households. Four other disasters that featured prominently were – lack of rainfall, impassable road, fire and theft/vandalism. When asked how big an effect these had on livelihood or businesses, 96% of respondents stated that they constituted big or major obstacles to them.

Several factors and obstacles affect livelihood capabilities and ability to participate or engage in income generating activities, which lead to the reason behind income inequality and poverty, especially in rural areas. Public infrastructure such as rural electricity, clean water supply, road, transport and communication can have a positive effect on people's lives and the types of activities in which they can participate. The effect of infrastructural investment can lead to reducing transaction costs on existing enterprises as well as opening up new opportunities that otherwise would have been inaccessible to rural households.

4.10 Distribution of households according to livelihood outcome

Given different vulnerability possibilities and livelihood factors described in Section 4.1 - 4.4, it becomes inevitable that households differ in their livelihood outcome which explains why there are inequalities between 'the poor' and 'the wealthy'. It further explains why some households are able to take up certain activities and why some cannot. Four major factors used to define livelihood outcomes in the study area are - income level, farm size (land), education and food consumption expenditure.

These four factors provided the basis for analysing the effects of inequalities in terms of vulnerability and non-vulnerability status. Income based criteria are often used to describe or explain people well-being and the extent of their sensitivity to and resilience against various aspects of livelihood outcomes. The livelihood stratification and categorization adopted in this study using household data is shown in Table 4.8.

Three groups were identified in relation to all the socio-economic characteristics that data revealed - the lower class, middle class and the upper class. This categorisation has been used by other authors such as Kutengule (2000) in analysing farm and non-farm income sources in Malawi. The most significant determining factor as to why people are classified as poor or wealthy is based on their household income level. It was found that about 63% of households fall into a low income group in the study area (as reflected in Table 4.8).

Table 4.8 Distribution of households by Livelihood vulnerability

Livelihood Outcomes 1 Naira=0.00635 US\$	High Vulnerability	Moderate Vulnerability	Low Vulnerability
Consumption Income (000)	≤ 9.0	10.0 -15.0	16.0 –22.0
Number of households	152	71	17
Percentage share	63.3	29.5	7.2
Mean (All sample = 7.897)	5.12	10.69	14.75
Farm Size (Hectares)	≤ 2.0	2.5 – 3.0	3.5 –5.0
Number of households	181	33	16
Percentage	79.6	13.7	6.7
Mean (All sample = 1.96)	1.58	2.37	2.88
Completed Education (Years)	≤ 10	11 –13	14 –16
Number of households	164	49	27
Percentage	68.3	20.4	11.3
Mean (All sample = 6.89)	4.54	9.04	12.93
Total Household Income (000)	≤ 200.0	205.0 – 300.0	301.0 – 630.0
Number of households	151	48	41
Percentage	62.9	20.0	17.1
Mean (All sample = 213. 22)	132.30	267.81	443.07
% share of Total household income (100)	39.0	25.0	36.0

Source: Household survey data.

Farm size and consumption distribution show that the majority of the households are locked into small farm holdings and low consumption income (high vulnerability group). It was found that nearly 80% of households farm on 2.0 hectares or less. This finding is consistent with findings elsewhere in Nigeria. Fabusoro *et al.* (2010) found that small scale farming dominates rural agricultural production in Nigeria. The literature on rural livelihood has shown that lack of access to land accounts for why many people are poor (Onyeiwu and Liu 2011) and one of the reasons why people are taking up non-farm employment (IFAD 2009b).

The method adopted in categorising the groups as shown in Table 4.8 used values closest to mean values of the whole population to determine high vulnerability groups. Education is the exception, with the ‘high vulnerability group’ categorised as less than 10 years which is slightly higher than the population of 6.89 years. This is because those who have spent between 0 – 10 years in education in this study are classified as ‘no or low education’ (people who could not attend any schooling and those who do not hold more than primary school qualification). The 11 – 13 years of education category are people who were able to complete

secondary education and obtained a college qualification, while the 14 – 16 years education groups are those who obtained higher education or degrees.

For all the factors considered (consumption, farm size, education, and total household income) the mean values for high vulnerability groups was found to be nearly two times lower than the moderate vulnerability group despite the population sample of the former being almost three times higher than the latter. Similarly, the mean values for the high vulnerability group were lower than the average recorded for the entire population, whereas moderate and low vulnerability groups showed higher mean values when compared to the mean of the whole sample averages despite having a smaller population.

In all cases, there was high proportion of households in the high vulnerability group, which suggests that the majority of households are in a poverty situation. In all the factors considered in defining ‘vulnerability’ more than half of the study population or nearly two-thirds of households fall into the ‘high vulnerability’ group. Review of literature revealed that national surveys for the past 16 years in Nigeria showed that poverty was most widespread in rural areas, an incidence of 69.3% in 1992 declining to 63.3% in 2004 (NBS 2007). Chapter Five, describe the determinants of households income and shows a more detailed analysis of the three vulnerability groups based on income categorisation (crop income, livestock, farm, non-farm and household income) (Section 5.3, Tables 5.3a – 5.3e).

There is a debate among scholars as to ‘whom’ non-farm incomes become more important: the poor or the rich in rural areas. Also, there still appears to be two divisions as to the most important sector in the rural economy. The study found that non-farm income is important to both the poor and the rich. All the head of households that participated in the household survey reported to earn non-farm income (either in full-time or part-time employment). The poor (uneducated and near landless) engage in non-farm employment as a source of extra income. Whereas the rich diversify into non-farm to reduce the risk associated with farming uncertainty or to create wealth.

Chapter Five

Structure and Determinants of household income

5.0 Introduction

This chapter investigates the sources, structure, distribution and determinants of income among households. It also investigates various groups of households found within the study area using data collected from the household survey. It categorises household income as earned and unearned income. However, the focus will be on earned income in trying to analyse the various factors which determine and explain why there are different income sources and inequalities among households. Analysis based on disaggregated data (on various vulnerability groups) focuses on assessment of the relative quantitative significance of various livelihood sources by applying the vulnerability approach as described earlier in Chapter Four to determine livelihood outcomes.

Household income refers to returns to family labour after the current cost of production (excluding family labour and rent for land and assets) has been deducted from the gross value of production (Rahman 1999). Current costs are the costs incurred by individual households in purchasing inputs (seeds, fertiliser, pesticides, etc), hiring labour, hiring machinery, renting, among others. Farm income comprises income from various crops, fisheries, livestock and leased land. Crop income is derived from sales of crops such as rice, yam, cassava, cocoyam, potatoes, maize, palm oil, trees and vegetables. In the study area the dominant sources of crop income are rice, cassava, yam, potatoes, groundnuts and palm oil.

5.1 Farm and non-farm income sources

Non-farm income constitutes all sources of non-agricultural income earned off-farm and includes off-farm paid labour work, wage employment, trading and other businesses. Earlier in Chapter Four, this study revealed that non-farm employment serves as a main source of family income and as a source of extra income to the majority of households. It also revealed that in monetary terms, farming contributes about 56% while non-farm activities contribute about 44% of overall household earned income in the study area. Although 100% of households who participated in this survey were engaged in farming, only about 24% were engaged in farming as a sole means of livelihood; 76% of households combined farming with non-farm income activities. Therefore, both farm and non-farm incomes constitute a substantial proportion of household income and both are therefore important to rural people.

The mean household incomes in naira are 121,290 (farm income), 94,070 (non-farm income) and 215,360 (Total household income). Analysis of distribution of income among households showed that a higher proportion of the population incomes were below the average of the whole population; 60% of households (farm income), 57% (non-farm income) and 63% (total household income). As much as 25% of the household does not earn up to half of the population average annual income. There are a high proportion of households on very low income and wealth is not evenly distributed within the population.

Table 5.1 Structure of household earned income

Amount in Naira (000)	Farm Income		Non-farm Income		Total Household Income	
	<i>Frequency</i>	<i>Percent</i>	<i>Frequency</i>	<i>Percent</i>	<i>Frequency</i>	<i>Percent</i>
1 - 25	16	6.7	52	21.7	2	.8
26 - 50	42	17.5	35	14.6	12	5.0
51-100	77	32.2	75	31.3	45	18.8
101-150	47	19.5	39	16.2	37	15.4
151-200	32	13.4	16	6.6	56	23.3
201-300	21	8.7	20	8.3	47	19.6
301-400	5	2.1	3	1.3	22	9.2
401-500	-	-	-	-	8	3.3
501-600	-	-	-	-	9	3.8
601-700	-	-	-	-	2	.8
Total	240	100.0	240	100.0	240	100.0
Mean Values	121.29		94.07		215.36	
Std. Deviation	80.297		78.149		132.189	
Variance	6447.582		6107.201		17473.855	
Sum Total	28121.0		22576.0		51173.0	

Source: Household survey data

Note: 1 Naira=0.00635324US\$

Data collected on earned income were real values and was analysed as real values in determining household income and later categorised into groups (Table 5.1). Mean values, Standard Deviation and variance were calculated from the real values of income and not from range values. All households reported to have earned non-farm income during the survey year, although only about 76% participated actively full-time. The remaining 24% represents full-time farmers, only engaging in non-farm activities occasionally but not as a major source of livelihood. However, for either situation, non-farm income is a major component of family income. About 68% of households own a non-farm enterprise. From farm and non-farm income sources, the majority of households were found to be on a medium income range of 51000 – 200000 naira; 64.9% (farm income) and 54.1% of households (non-farm income).

5.2 Other sources of household income

Rural livelihoods are determined by income generating activities and assets which individuals or households depend on and can use to improve their welfare and construct a living. Besides income earning activities such as farming and non-farm work, households explore other forms of generating additional income outside farm and non-farm sources. These activities include sale of family assets, land, remittance from migrated family members, gifts and exploitation of other natural resources. The availability of these resources also determines the extent of vulnerability of individuals and households in rural areas. Vulnerability has been closely associated with asset ownership in the rural livelihood framework. It is believed that the more assets people own or have access to, the less vulnerable they become and the lesser the assets, the greater their insecurity or vulnerability.

Typically, it was found that farm and non-farm income activities do not provide enough income for family consumption needs for about 88% of the households. This accounts for why nearly 68% of households are increasingly exploring natural resources (stone and wild fruit gathering, sand dredging, logging, etc) for either consumption or as a source of extra income. Similarly, about 63%, 64% and 73% of households reported to have generated an extra source of income from the sale of assets (excluding land), sale of land and remittances respectively. Some risk factors influence individual or household vulnerability, maintain some authors. According to Devereux (2001), these factors include the household's relative wealth, access to sources of alternative income, the kind of support households receive from other family members and the nature of social networks.

The dwindling of both farm size and agricultural productivity in this area is attributed to the tendency of families to sell part or most of their farm land in order to raise capital for investment such as buildings or home improvement and or for investment in non-farm businesses. The study found a downward trend in the number of big-farm households and an increase in small-farm households (in both ownership and amount of land cultivated) over the past years (Chapter Four, Table 4.1: Land owned and farm size 2005 – 2009).

As the literature suggests, when the poor migrate due to unemployment or underemployment in the rural areas, they sell off or rent out their farm land. They then engage in diverse activities to increase their income. These activities include on-farm and off-farm labour and own non-farm small businesses. Also, farmers with small land tend to sell-off or rent their

land in a move towards on-farm and off-farm wage labour. Also, lack of income generating activities drives poor people to depend heavily on natural resources for food and income.

Remittance refers to money from migrated household members that is sent back home to family members and friends. Nearly 88% of households had members who have migrated and the mean migrated members of all households were two persons per household. The study found that remittance ranked as the third most important source of capital for increasing investment in farm or non-farm businesses (non-farm income and sale of land being first and second respectively) as shown in Table 5.2.

Table 5.2 Distribution of households by other sources of income

Amount in Naira (000)	Sale of Assets (excluding land)		Sale of land		Remittance from migrated family members	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
None	89	37.1	86	35.8	65	27.1
1 – 10	31	12.9	-	-	3	1.3
11 – 20	41	17.1	-	-	17	7.1
21 – 50	62	25.8	30	12.5	71	29.6
51 – 100	13	5.4	58	24.2	56	23.2
101 – 200	3	1.3	45	18.8	24	10.0
201 – 400	1	.4	17	7.1	4	1.7
above 400	-	-	4	1.6	-	-
Total	240	100.0	240	100.0	240	100.0

Source: Household survey data

Migration takes place when people commute to nearby towns, urban areas, cities or abroad to seek employment or when they move temporarily or permanently to live outside their communities in search of employment or to set up businesses to earn a living. World Bank (2011) maintains that remittances are playing an increasingly large role in the economies of many countries, contributing to economic growth and to the livelihoods of less prosperous people (though generally not the poorest of the poor).

According to World Bank (2011) estimates, remittances totalled US\$414 billion in 2009, of which US\$316 billion went to developing countries and involved 192 million migrant workers. For some recipient countries, remittances can be as high as a third of their GDP (ibid). As remittance receivers often have a higher propensity to own a bank account, remittances promote access to financial services for the sender and recipient, an essential aspect of leveraging remittances to promote economic development (World Bank 2011).

Of the three forms of non-earned income sources analysed, the study revealed that sale of land and remittance provides substantial sources of income to families. In real terms, sale of household assets (not including land) provided about 51000 – 200000 naira to about 7% of households in 2009. On the other hand, remittances and sales of land provided the same value to 23% and 43% of households respectively. Rural land performs a wide range of economic, social and environmental roles in the rural areas.

Land is fundamental to the lives of poor rural households, being the main source of food, shelter, income and social security. It has been stated that secure access to land reduces vulnerability to hunger and poverty (IFAD 2010). This study found a land tenure system which discriminates against women, similar to the pattern found in most villages in Nigeria. Land ownership is male dominated and women are excluded from inheriting or ownership of land on a permanent basis. As reported by IFAD (2010), for many of the world's extremely poor rural people in developing countries, secure access is becoming more tenuous.

“Tenure security is important not only for agricultural production; it also allows poor people to diversify their livelihoods by using their land as collateral, renting it out or realizing its value through sale. Land issues affect the everyday choices of poor rural men and women, such as which crops to grow and whether crops are grown for subsistence or commercial purposes. They influence the extent to which farmers are prepared to invest in their land or to adopt new technologies and promising innovations” (IFAD 2010).

5.3 Distribution of Income among Vulnerability Groups

Earlier in Chapter Four, Section 4.10, three vulnerability groups were identified within the study area. As explained in most livelihood studies, groups, families or households are often classified depending on their vulnerability outcomes. These outcomes are further determined by level of income, type of employment, consumption income, land availability, natural resources base or disasters. This study applied three factors (land size, consumption income and level of income) in determining three vulnerability groups earlier shown in Chapter Four, Table 4.8 and income vulnerability, presented in this Chapter, Tables 5.3(a) – 5.3(e).

In order to meet the objectives of this research, a Vulnerability line was defined using level of income, which resulted in identification of three groups within the study area (Table 5.3a – 5.3e) as ‘high vulnerability’, ‘moderate vulnerability’ and ‘low vulnerability’. It used the whole population average to set the minimum income band for the highly vulnerable group

(households whose total income was nearly the same or less than the average of the whole sample). This classification was adopted in order to categorise the study population and does not represent a typical Standard National Income Poverty Index.

The averages are 6.89 years (education), 1.96 hectares (farm size), 121,290.00 naira (farm income), 94,070.00 naira (non-farm income) and 215,360.00 naira (total household income). Dividing average household income by total labour force (457) yielded a per capita income of roughly 471.25 naira for working household members within the study area. Income and farm size estimates are slightly higher than the findings elsewhere in Nigeria by other authors. Notably, Fabusoro *et al.* (2010) in a study of Livelihood Diversification in Ogun State, western Nigeria found averages of farm size (1.3 hectares), farm income (99,967.00), non-farm income (62,335.01) and total household income (158,455.30 naira). However, the reason for a higher proportion of farm size and income estimates is attributed to the high rate of farming in the study area, and difference in the scale and year of the research.

The average crop income of moderate and low vulnerability groups was higher than the average of the entire population and high vulnerability group despite the high vulnerability population being more than half of the entire population. The average crop income in naira recorded for the groups (Table 5.3a) are high vulnerability (52500), moderate vulnerability (105380), low vulnerability (167860) and whole population (83050). Similarly, the combined percentage share of crop income to overall household income (both moderate and low vulnerability) are higher than that of higher vulnerability group despite the latter being more nearly half of the entire population.

Table 5.3(a) Distribution of Crop income among Vulnerability Groups

Income in Naira (000) 1 Naira = 0.00635US\$	High Vulnerability	Moderate Vulnerability	Low Vulnerability	All Sample
Income Range	≤ 30.0	31.0 – 100.0	101.0 – 150.0	
Crop Income				
Average	52.50	105.38	167.86	83.05
Sum	7928.0	4953.0	7050.0	19931.0
Standard Deviation	34.178	67.288	74.826	67.206
% share (Crop total income)	39.78	24.85	35.37	
% share (All household income)	15.49	9.67	13.78	38.94
Number of Households	109.0	69.0	62.0	240.0

Source: Household survey data.

Crop income is a major contributor to household income in rural areas. The study found that crop income contributes about 38.94 percent of overall household income (Table 5.3a). Distribution of livestock incomes among the various vulnerability groups followed similar pattern as crop income (Table 5.3b). Livestock farming is not a major source of livelihood activity in the study area, however it contributes significant share of household income (about 17.92 percent). The study found that livestock animals serve as means of savings in the study area, as animals are kept by household and are sold in times of capital needs.

Table 5.3(b) Distribution of Livestock income among Vulnerability Groups

Income in Naira (000) 1 Naira = 0.00635US\$	High Vulnerability	Moderate Vulnerability	Low Vulnerability	All Sample
Income Range	≤ 25.0	26.0 – 50.0	51.0 – 150.0	
Livestock sales				
Average	28.11	47.78	63.98	38.24
Sum	4245.0	2246.0	2687.0	9178.0
Standard Deviation	22.714	27.631	42.582	31.32
% share (Livestock total income)	46.26	24.47	29.27	
% share (All sample total income)	8.29	4.38	5.25	17.92
Number of Households	105.0	79.0	56.0	240.0

Source: Household survey data.

Analysis of the vulnerability groups based on farm income (a combination of crop and livestock incomes) followed the same trend as farm and livestock incomes. The average farm income of moderate vulnerability group was almost double and low vulnerability, almost three times that of high vulnerability group. Overall, the share of farm income constitutes the highest proportion of household income (56%) in the study area (Table 5.3c).

Table 5.3(c) Distribution of Farm income among Vulnerability Groups

Income in Naira (000) 1 Naira = 0.00635US\$	High Vulnerability	Moderate Vulnerability	Low Vulnerability	All Sample
Income Range	≤ 100.0	101.0 – 200.0	201.0 – 500.0	
Farm Income				
Average	79.62	148.21	217.43	121.29
Sum	12023.0	6966.0	9132.0	28121.0
Standard Deviation	45.581	64.817	93.146	80.297
% share (Farm total income)	42.75	24.77	32.47	
% share (All sample total income)	23.49	13.51	17.00	56.0
Number of Households	135.0	79.0	26.0	240.0

Source: Household survey data

The results of the analysis of the non-farm income (Table 5.3d) showed that high vulnerability group contributed less than low vulnerability group in all aspect considered despite the population of the former being about seven times that of the latter. The average non-farm incomes are: high vulnerability (54150), moderate vulnerability (122150) and low vulnerability (206170). Also, the percentage shares to overall household income were 15.9% (high vulnerability), 11.2% (moderate vulnerability) and 16.8% (low vulnerability).

Table 5.3(d) Distribution of Non-farm income among Vulnerability Groups

Income in Naira (000) 1 Naira = 0.00635US\$	High Vulnerability	Moderate Vulnerability	Low Vulnerability	All Sample
Income Range	≤ 100.0	101.0 – 200.0	201.0 – 500.0	
Non-farm Income				
Average	54.15	122.15	206.17	94.07
Sum	8176.0	5741.0	8659.0	22576.0
Standard Deviation	37.492	58.028	83.867	78.149
% share (Non-farm total income)	36.22	25.43	38.35	
% share (All sample total income)	15.98	11.22	16.80	44.0
Number of Households	162.0	55.0	23.0	240.0

Source: Household survey data.

The literature suggests that the declining productivity and low farm income in African countries drives people to undertake non-farm employment (IFAD 2009b). The study found farm income constituted about 56 percent share of household income, while non-farm income took a share of about 44 percent. It follows therefore, that if non-farm incomes are to become unavailable to these households, the majority will be plunged into higher vulnerability. Non-farm income has become an important source of household income and performs various functions in the rural livelihood system (such as security, consumption and source of capital).

The mean household income of the entire study population was 215,360.00 naira. The distribution of household income by Vulnerability (Table 5.3e) shows that the average income of high vulnerability group (132300) with a population of 151 households was less than the average income of low vulnerability group (443070) comprising of 41 households. Also, the average income for high vulnerability group was lower than the whole population average, whereas the average incomes of moderate and low vulnerability groups were higher than the average (215360) of the whole population.

Table 5.3(e) Distribution of Household income among Vulnerability Groups

Income in Naira (000) 1 Naira = 0.00635US\$	High Vulnerability	Moderate Vulnerability	Low Vulnerability	All Sample
Income Range	≤ 200.0	201.0 – 300.0	301.0 – 650.0	
Household Income				
Average	132.30	267.81	443.07	215.36
Sum	19977.0	12587.0	18609.0	51173.0
Standard Deviation	52.287	27.698	96.661	132.189
% share (All sample total income)	39.05	24.59	36.36	
Number of Households	151.0	48.0	41.0	240.0

Source: Household survey data.

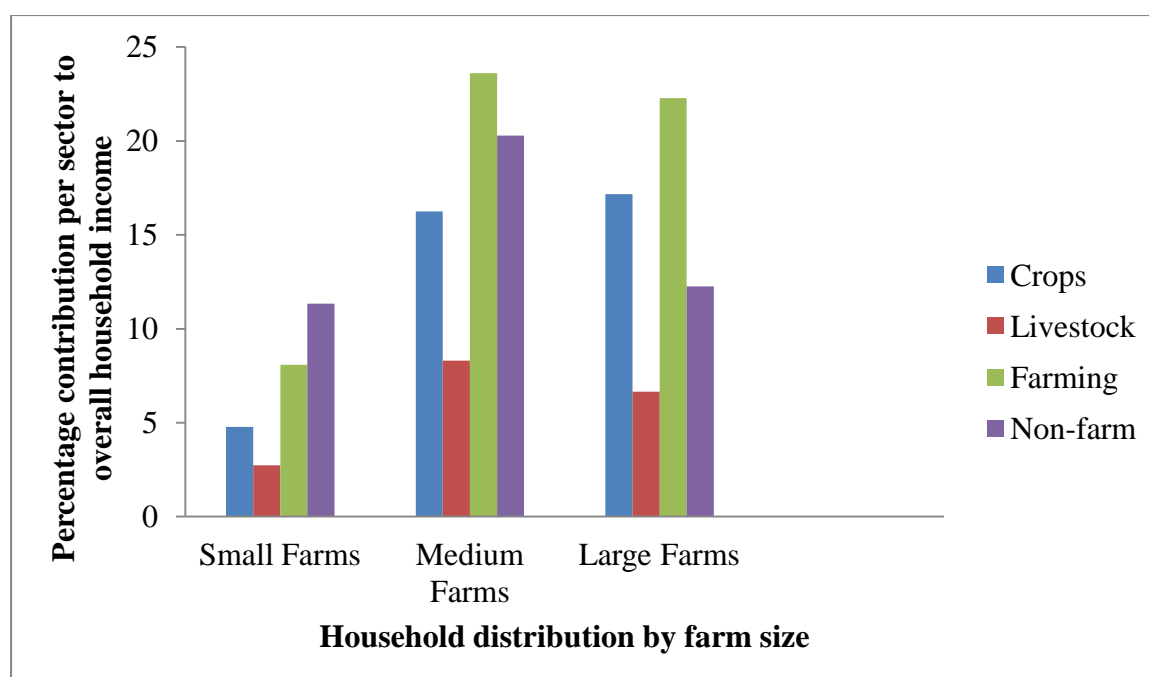
The method adopted in classifying the three vulnerability groups above is derived from review of literature, suggesting that asset ownership including level of income are the major determinants of people's vulnerability. For example, Devereux (2001) state that vulnerability is closely linked with asset ownership; hence individuals, households or communities are considered less vulnerable if they have larger asset holdings and vice versa. On the other hand, the low level of rural farm and non-farm income is the main reason why poverty rates are highest in the rural areas.

5.4 Share contribution of sectors by farm size and level of education

In the study area, the two most important assets that households possess that affect their livelihood vulnerability and level of income are land and level of education. Households were grouped into small (0.1 – 1.9 hectares), medium (2.0 – 2.9 hectares) and large farms (3.0 – 5.0 hectares) in terms of contribution to overall household income (Figure 5.1). The sample population were 80, 48 and 109 households respectively.

The study found that small-farm holders despite having nearly twice the number of households (80) to the population of large-farm holders (48) had very little contribution to overall household income from crop (4.78%), livestock (2.74%) and farming income (8.08%) to overall household income. Non-farm contribution was higher (11.34%) and almost the same for large-farm holders (12.25%) as shown in figure 5.1. This shows that small farms generate low household income and that small farmers engage and earn more from non-farm sources. It is for this reason that subsistence farming has been suggested in the literature as the main reason for poverty in rural areas, especially African rural villages.

Figure 5.1 Sectors contribution to household income by farm size



Source: Computed from household survey data

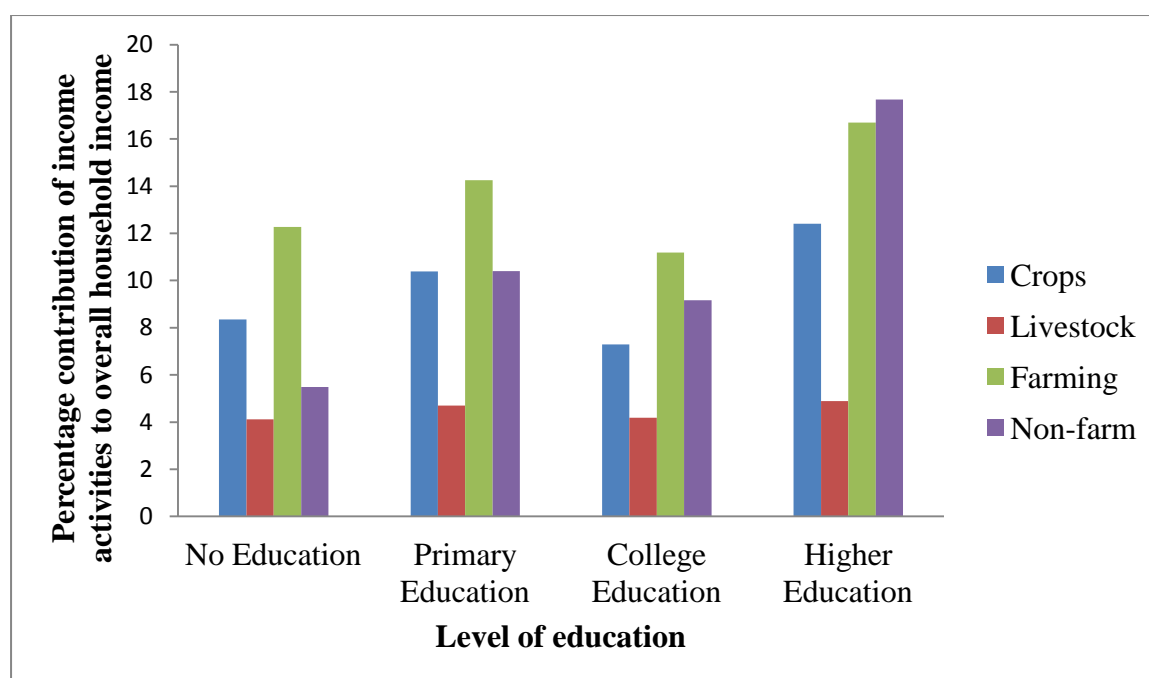
Large farm households contributed nearly three times as much as small and medium farm groups did to overall household income of the entire population from crop and farm income. Results also show non-farm income make up very high contributions to income for small, medium and large farm households. It means that non-farm income is important to all rural households despite their ownership of either small or large farms. Households with smaller farms are likely to participate in full-time non-farm employment throughout the year. On the other hand, medium and large farms households spend most of their time on farming activities and participate in non-farm during off-season or engage in non-farm work (part-time) on days when not on farms.

As discussed in Chapter Two (review of literature), diversification of income has become a strategy for rural people in order to increase and sustain their income throughout the year. There is still a debate among scholars whether such a strategy is good or bad for rural people. Measured by mean values, non-farm activities provide the highest income level (94070), followed by crop income (83050) and livestock (38241). The finding is similar to the work of Onyeiwu and Liu (2011) on determinants of income poverty in Kenya and Nigeria. The authors suggest from the examination of income sources and levels that individuals enjoy the best income generation opportunities if they receive profit from non-farm activities. It is

obvious that non-farm activities play a crucial role in increasing household income in rural areas where agriculture is the primary source of livelihood. Therefore, it is important that rural policies are designed to promote both farm and non-farm sectors in order to increase household income and reduce poverty.

Households were categorised into no education, primary education, college education and higher education groups. These groups were made up of 76, 73, 45 and 44 households respectively. Farm income contribution to overall household income in all the groups was almost equal with 12.27%, 14.26% and 11.19% for no education, primary and college education, respectively (Figure 5.2). Higher education groups contributed 16.7%. However, there was much difference between these groups in terms of non-farm contribution to overall income. Findings show a non-farm contribution pattern of 5.4%, 10.4%, 9.1% and 17.6% for no education, primary, college and higher education qualifications respectively.

Figure 5.2 Percentage contributions to income per sector by educational level



Source: Computed from household survey data

The results underline the fact that level of education is linked to employment and participation in non-farm income activities. In addition, the pattern of distribution of non-farm income showed that non-farm income is important to a majority of households in the rural areas. Except household groups with no education and college education, other

categories showed double figure percentage contribution from non-farm income to overall household income. Education is an important livelihood factor that enables people to participate in higher income earning activities and employment.

Education stimulates entrepreneurial and management skills, and enhances productivity both in farm and non-farm sectors. It also provides other livelihood options in the event of farm failure or natural disaster that could lead to low income. This is because households with better education or skills have the capacity to seek employment in the wage sector while participating in farm work as well. Income from such employment opportunities can be used to invest in or expand farm and non-farm activities.

5.5 Farm-Non-farm linkages

Several studies have shown that non-farm income is often a source of reinvestment in agriculture. Similarly, farm income also serves as source of funds for investment in non-farm businesses. This study found that farm income provides about 10 – 49% of capital for non-farm investment to about 89% of households and 50 – 80% to about 11% of households. The contribution of non-farm income as capital for investment in farming was higher. Non-farm income provides about 10 – 49% of capital for investment in farming to about 30% of households and 50 – 80% of capital for farming investment to about 70% of households (Table 5.4). It follows that non-farm income provides a higher proportion of capital for investment than farm income.

Table 5.4 Contribution of farm and non-farm income to Household Investment

Farm and non-farm incomes	Number of Households	Percentage of household
Percentage contribution from farming to non-farm activities		
0 – 49	213	88.7
50 – 80	27	11.3
Percentage contribution from non-farm work to farm activities		
0 – 49	71	29.6
50 – 80	169	70.4

Source: Household survey data

Swift (1989) has provided a clearer framework for explaining the linkages between asset ownership (and access), production and exchange activities, and consumption possibilities. The framework identifies production, exchange and asset formation processes as key to the

understanding of how vulnerability is created and perpetuated, and how it can possibly be reduced. The framework explains that ownership of physical assets (such animals, farm equipment and houses, etc), natural assets (land), financial assets (savings) and human assets (education) can determine the capacity for participation into livelihood opportunities.

5.6 Determinants of household income (Regression analysis)

In Chapter Four and Chapter Five, Sections 5.1 – 5.5, income and diversification patterns of households were analysed to reveal all the socio-economic characteristics and factors affecting rural livelihood outcomes. Disaggregated data and different groups of livelihood vulnerability were also identified and the effect of each factor on the groups shown. However, analysis was still required to show why and how certain trends of livelihood and income diversity existed and why some people are able to undertake some activities and why others could not.

In Chapter Two and Three (review of literature and research methodology), the study explored literature to investigate determinants of income or livelihood diversification. Review of literature reveals some of the factors that influence people's ability to diversify into income activities offered by farm and non-farm sectors. The research required further investigation using regression analysis to test some hypotheses identified from literature and explore how these factors apply to livelihood in the study area.

In determining household income for this study, two employment categories were identified: farm and non-farm employment. Household incomes are derived from these two income activities. Farm income comprises income from crops, livestock and fishing while non-farm income includes all income activities that comprise trading, skilled or unskilled employment off-farm and ownership of non-farm enterprises.

The study hypotheses on determinants of rural inter-household income variations were developed in relation to data collected during the household survey and with guidance from literature on determinants of household income. In Chapter Two (review of literature), several factors were discussed from various authors' experiences that affect income diversity. However for the purpose of this research, eight factors were employed to analyse the effects on livelihood in the study area in meeting the objectives of the study: - Number of households' labour force, level of education, age, farm size, proportion of land owned, capital

(savings), ownership of non-farm enterprise and access to basic infrastructure. These led to identification of hypotheses deemed important to this study and policy.

5.6.1 Study Hypotheses

H1: The greater the size of the household labour force, the higher the household income.

H2: The higher the level of education of head of household, the higher the household's income.

H3: Age is an important determinant for participation in income generating activities.

H4: The larger the size of farm land, the higher the household income.

H5: The higher the proportion of farm land owned by a household, the higher the household income.

H6: The higher the amount of financial capital (savings) owned by a household, the higher the household income.

H7: Households owning non-farm economic enterprises have higher income than those which have not diversified into non-farm activities.

H8: Households with access to basic infrastructure (roads and electricity) have higher income than those without basic infrastructure.

Although there are many models that could be used to estimate household income, the analysis and factors used for this study include only variables considered from literature to be more relevant to the study, the people being studied and for which data was available.

5.6.2 Analytical Models

In determining household income variation, the regression models applied primary data collected through the household survey. Determinants of household income, farm and non-farm incomes were analysed to reveal the effect of factors considered in this research in order to determine the type of association between the variables. Household income, crop income, farm income and non-farm income were the dependent variables.

Multiple Linear Regression analysis was chosen so that all the eight factors (independent variables) could be fitted into the regression analysis. This is because income of households depends on many factors. The term 'linear' is used because in multiple linear regressions we assume that 'y' is directly related to a linear combination of the 'explanatory variables' (Denis 2011).

In assessing the determinant of household income, the structural equation was specified as:

$$y = a + \beta_1 x_{1i} + \beta_2 x_{2i} + \dots + \beta_n x_{ni} + \varepsilon_i$$

y = Dependent variable, ' a ' is the intercept constant, while x = independent variables;

β_1 to β_n are the coefficients relating the n explanatory variables to the variables of interest;

n = number of explanatory variables and ε_i = error term

The terms of the independent variables (x_1 x_8 in the model specifications are as follows:

HL = Household labour force (number of adult household members working) (persons)

E = Completed years of formal education (years)

A = Age of heads of household (years)

FS = Amount of farm land cultivated by household (hectares)

FSO = Proportion of farm land owned by household (%)

FC = Financial capital (savings and capital held as stored crops or livestock) (000)

ONF = Ownership of non-farm activity (dummy)

I = Access to basic infrastructure (tarred roads and electricity) (dummy).

5.6.3 Specification for Household Income: Initial test of hypotheses with the eight factors and (H1 – H8, stated in section 5.6.1) resulted in removing H5 (Proportion of farm land that is owned by household) from the new equation model since there was no significant association observed. However, this did not result in much change in the Adjusted R square (.915 for the reduced model and .916 for the initial model). Table 5.5 show the results of the test of hypotheses using the eight independent variables stated in section 5.6.2. The reduced model specification for determinants of household income is as follows:

$$HI(Y) = f(HL, E, A, FS, FC, ONF, I) \dots \dots \dots (1)$$

Where HI (Y) = Household Income (000 naira)

5.6.4 Specification for Non-farm Income model: The reduced equation for non-farm income when regressed with the variables explained in Section 5.6.2 is shown in model 2.

$$NFI = f(HL, E, A, FS, ONF) \dots \dots \dots (2)$$

Where NFI represents the amount of non-farm income received by households (000)

5.6.5 Specification for Crop Income model: Variables which have significant influence on crop income and represent the reduced model as:

$$CROPI = f(HL, FS, FC) \dots \dots \dots (3)$$

Where CROPI represent the amount of crop income received by households (000)

5.6.6 Specification for Determinant of Farm income: The reduced model for the determinant of farm income is shown as:

$$FMI = f(A, FS, FC) \dots \dots \dots (4)$$

Where FMI represents the amount of farm income received by households (000)

5.7 Multiple Regression Analysis

The parameters using Multiple Regression analysis for determining household income, non-farm income, crop income and farm income are presented in Tables 5.5 - 5.9. Results were interpreted in relation to the set of explanatory variables which have significant relationship with the four dependent variables. All the households were reported to have earned non-farm income (although only 76% of households were actively employed in non-farm activities) so there was no zero income from non-farm income sources. In this case the Tobit estimation procedure was not applied; instead the OLS method was used for all the models. Several authors have used this method in applying multiple regressions on determinants of income (Ahmed and Hossain 1990 and Rahman 1999).

The criteria for concluding that variables are significantly related were:

a) The *t-value* (Wald's test): In this case, the general assumption is that null hypothesis can be rejected if the *t-value* is more than 2 in absolute value (Green 2003, 2010). The limitation underlining this rule is that sometimes it can lead to wrongly rejecting statistically significant estimates (ibid). Hence in order to avoid this, the criteria (b) were adopted instead.

b) The value of significance: This is measured at 95% confidence interval. The probability that a parameter estimate is not acceptable is given as $P[Z > z]$, the lower the $P[Z > z]$, the higher the reliability of the coefficient estimate is predicted. In this study the criteria used was $P[Z > z]$ that is not greater than 0.05 (5% levels were adopted as statistically significant and are marked with an asterisk (*) in the $P[Z > z]$ column in Tables 5.5 – 5.9).

Table 5.5 Results of Test of Hypotheses on determinants of household income

Variables	Coefficient	T- ratio	P(Z>=z)	95% (Coefficient interval)	
				Lower	Upper
Household labour force	44.059	10.906	0.00***	36.099	52.019
Education Level of Head of Household	6.839	8.533	0.00***	5.260	8.418
Age of Head of Household	-1.322	-4.367	0.00***	-1.918	-.725
Farm size	26.588	5.515	0.00***	17.089	36.088
Proportion of Farm size owned (%)	.339	1.381	0.16	-.145	.824
Level of Financial Capital	.331	6.108	0.00***	.224	.437
Ownership of Non-farm enterprises (dummy)	19.587	2.397	0.01***	3.485	35.689
Access to Basic infrastructure (dummy)	23.181	2.797	0.00***	6.852	39.510

***=Variable significant at the 1% level

Constant=26.501

df = 8

Adj. R square = .916

F value = 320.675***

n=240

5.7.1 Determinants of household income variation (reduced model)

The linear model on determinants of household income included 240 households. The proportion of variance explained in this model is high, with adjusted R^2 of .915 which is an indication of a good model. Seven out of eight hypothesised variables were significantly correlated with household income at 1% level and as hypothesised; their coefficients all had a positive sign, except age. This implies that the higher any of the factors with positive correlation, the higher the household income. In Chapters Two (literature review) and Six, the effects of these factors on household income were explored and discussed.

It is evident from Table 5.6 that household labour force has the greatest effect on household income as shown by a coefficient of 44.658, followed by farm size (27.754), access to basic infrastructure (27.664), ownership of non-farm enterprises (21.412) and education (7.107). Some studies have found a positive relationship between household income and household's labour force (Reardon *et al.* 1992, Rahman 1999, Aikaeli 2010). It is widely believed that

higher availability of labour enables households to contribute more labour into farm and non-farm activities. Age has a negative effect on income (-1.324) and as reported earlier in Chapter Two, it shows that older people earn lower incomes than younger people.

Table 5.6 Determinant of household income variations (reduced model)

Variables	Coefficient	T- ratio	P(Z>=z)	95% (Coefficient interval)	
				Lower	Upper
Household labour force	44.658	11.097	0.00***	36.728	52.587
Education Level of Head of Household	7.107	9.122	0.00***	5.572	8.642
Age of Head of Household	-1.324	-4.365	0.00***	-1.921	-.726
Farm size	27.754	5.836	0.00***	18.383	37.125
Level of Financial Capital	.344	6.452	0.00***	.239	.449
Ownership of Non-farm enterprises (dummy)	21.412	2.650	0.00***	5.491	37.333
Access to Basic infrastructure (dummy)	27.664	3.621	0.00***	12.609	42.718

***=Variable significant at the 1% level

Constant=40.387

df = 7

Adj. R square = .915

F value = 364.767***

n=240

Several authors have shown that age of head of households and age distribution of household members has significant influence on household income. In some situations, age could be a determinant entry factor for some livelihood activities (Fabusoro *et al.* 2010). Younger men and women are more likely to migrate in search of non-farm income opportunities in near or distant communities or cities. Higher education also contributes to migratory activities in search of non-farm better paid jobs (Quisumbing *et al.* 2004 & Takahashi 2006). The literature also show that where age distribution of the household members includes younger people, members have more chances of taking part in non-farm activities and providing more labour needed for increased farm productivity and output.

Some of these livelihood factors have multiplier effects on income and are also linked. For instance, improvement in education will increase the number of the household labour force since many people will be educated and have new skills. Also, education provides the skills to manage and diversify, and the adoption of new technologies increases with higher levels of

education. Onyeiwu and Liu (2011) in their studies of determinants of income poverty found that an additional year of schooling raises average individual income by about 5 percent in Nigeria and 4.8 percent in Kenya.

Land is another important factor with significant influence on rural people as has been noted earlier; it can be a dividing line as to who is poor and who is not in rural communities (World Bank 2008). Some authors suggest that poor access to land normally leads to people seeking employment in non-farm activities (IFAD 2009b). On the other hand, households with large farm lands tend to spend most of the time farming and only seek non-farm work during off seasons (Fabusoro *et al.* 2010, Onyeiwu and Liu 2011).

Financial capital determines how much is available for farm and non-farm investment. Savings provide capital for investment and collateral security that enable people to secure capital to expand their income activities. Hence, availability of capital or own-cash sources is a significant factor in the extent of diversification or capacity to start non-farm businesses (Fabusoro *et al.* 2010). Barrett *et al.* (2001) maintain that missing credit markets can impede diversification into activities or assets characterised by substantial barriers to entry.

Infrastructure, especially access to road, electricity and water can have big influences in terms of marketing, investment and productivity. As noted by ADB (2012), the significant deficit in Africa's infrastructure is resulting in increased production and transaction costs, reduced competitiveness of businesses, negative impact on foreign direct investment flows to the continent; therefore affecting the rate of economic and social development.

5.7.2 Determinants of Rural Non-farm income

Five factors were significantly correlated with non-farm income at 1% level. The proportion variance explained in this model shows an adjusted R^2 value of .815 (Table 5.7). The level of financial capital and infrastructure were found to be significantly correlated with household income but not with non-farm income. This was expected since data collected as financial capital was based on the amount held either in savings or in stock for farm production.

The negative coefficient displayed by farm size (-14.815) in Table 5.7 suggests that households with small farm sizes participate more in non-farm activities than large farm households. Similarly, age is negatively correlated (-2.385) with non-farm income suggesting that younger people are more likely to take part in non-farm income activities than older people. Also, as expected, education is significantly correlated with non-farm income.

Table 5.7 Determinant of Rural Non-farm Income

Variables	Coefficient	T- ratio	P(Z>=z)	95% (Coefficient interval)	
				Lower	Upper
Household labour force	43.997	12.307	0.00***	36.954	51.041
Education Level of Head of Household	6.138	8.536	0.00***	4.721	7.555
Age of Head of Household	-2.385	-8.774	0.00***	-2.921	-1.849
Farm size	-14.815	-3.506	0.00***	-23.141	-6.489
Proportion of Farm size owned (%)	.061	.282	0.77	-.366	.488
Level of Financial Capital	-.054	-1.108	0.26	-.150	.042
Ownership of Non-farm enterprises (dummy)	16.450	2.258	0.02***	2.097	30.803
Access to Basic infrastructure (dummy)	11.059	1.489	0.13	-3.572	25.689

***=Variable significant at the 1% level

Constant= 113.348

df = 8

Adj. R square = .815

F value =132.280***

n=240

The most important factors positively influencing non-farm income are: the household labour force, with a co-efficient of 43.997; followed by ownership of non-farm enterprises (16.450); access to basic infrastructure (11.059); and education (6.138). Infrastructure did not show any significant association for household income. This could be attributed to the fact that the non-farm income includes migratory income earned in nearby or distant villages and the low level of infrastructure generally displayed in the study area.

Growth of farm and non-farm sectors is more rapid in environment with basic infrastructure such as paved roads and public electricity. However, in communities without these basic infrastructures, such as some villages in the study area, non-farm activities still thrive and provide employment either part-time to rural farmers or full-time to small-scale or landless farmers. Good roads promote efficient and reliable transport and help reduce transportation and marketing cost. Rural electricity supply provides power needed for industrial processes and the emergence of small-scale processing, storage and production activities.

5.7.3 Determinants of Crop income

It was found, as shown in Table 5.8, that only three factors were significantly correlated with household crop income. These were farm size (with a co-efficient of 28.379), household labour force (7.177), and financial capital (.433) and were all significant at 1% level. The number of adult members working (household labour force) influences labour availability for farming. In addition, if household members are employed in non-farm activities, they can contribute more capital, which can be used to increase the productivity of agriculture thereby raising farm income.

Land is a major factor in agricultural production and determines livelihood vulnerability in rural areas. Households without access to sufficient agricultural land are more likely to be on a low income and landlessness has been suggested as the main reason why farming is at subsistence level in Africa. Subsistence farming is one of the major causes of rural poverty since people are unable to sustain their income needs from farming alone.

There was no significant relationship between the proportion of land that is owned and crop income. This could be attributed to the fact that distribution of the proportion of land owned is high among farmers in the study area. The mean percentage of the proportion of land owned for the whole population was 67 percent. Capital availability or amount of savings determines how much the household can invest or the scale of agricultural production. With higher farm capital, households can procure agricultural inputs, seeds, fertilizers, land and pay for labour. In the study area financial capital in the form of personal savings is the main source of start-up and working capital due to lack of credit and micro-financing services.

The consequences of lack of capital are low productivity and low income for most households that depend on farming as their main source of livelihood. Infrastructure did not show any significant relationship with crop income due to the low level of infrastructure displayed in the study area. Good roads and electricity can lead to higher income since it facilitates access to market, reduces transaction cost, spoilage and waste.

Table 5.8 Determinants of Crop income

Variables	Coefficient	T- ratio	P(Z>=z)	95% (Coefficient interval)	
				Lower	Upper
Household labour force	7.177	3.044	0.00***	2.530	11.823
Education Level of Head of Household	-.133	-.287	0.77	-1.044	.779
Age of Head of Household	-.150	-.875	0.38	-.487	.187
Farm size	28.379	10.495	0.00***	23.050	33.708
Proportion of Farm size owned (%)	-.141	-1.001	0.31	-.418	.136
Level of Financial Capital	.433	13.860	0.00***	.371	.494
Ownership of Non-farm enterprises (dummy)	-1.567	-.333	0.73	-10.837	7.703
Access to Basic infrastructure (dummy)	4.789	1.028	0.30	-4.388	13.967

***=Variable significant at the 1% level

Constant= -14.163

df = 8, n=240

Adj. R square = .870

F value = 191.422***

5.7.4 Determinants of Rural Farm income

Age, farm size and financial capital were significantly correlated with farm income at 1% level. The coefficients displayed in Table 5.9 were farm size (42.671), age (1.065) and farm capital (.356). Analysis showed that education is not a major factor determining the level of farm activity. However, education can contribute to the extent that farmers can adopt new technologies and improved varieties, which could lead to higher farm income. The proportion of land owned also reduces the overall cost of fixed costs in farming and ensures land is available to farmers any time for increased agricultural production. The inverse relationship between farm income and ownership of non-farm enterprises is an indication that if farming provides enough income, the probability of diversifying into non-farm activities is reduced.

Household labour force did not show any significant relationship, since farm income comprises income from a range of agricultural activities including livestock, crops and fishing. Farm size, farm capital and age determine the extent to which people usually engage

in farming. Infrastructure is also very important; although there was no significant correlation with farm income, this could be attributed to the low level of infrastructure in the study area.

Table 5.9 Determinants of Rural Farm Income

Variables	Coefficient	T- ratio	P(Z>=z)	95% (Coefficient interval)	
				Lower	Upper
Household labour force	.826	.290	0.77	-4.781	6.433
Education Level of Head of Household	.983	1.725	0.08	-.140	2.106
Age of Head of Household	1.065	4.972	0.00***	.643	1.487
Farm size	42.671	12.336	0.00***	35.855	49.487
Proportion of Farm size owned (%)	.300	1.747	0.08	-.038	.638
Level of Financial Capital	.356	9.248	0.00***	.280	.432
Ownership of Non-farm enterprises (dummy)	-3.715	-.637	0.52	-15.214	7.785
Access to Basic infrastructure (dummy)	7.150	1.223	0.22	-4.369	18.670

***=Variable significant at the 1% level

Constant= -88.689

df = 8

Adj. R square = .875

F value = 206.538***

n=240

5.8 Regression based on disaggregated data

The result of multiple regression analysis as presented in section 5.7.1 – 5.7.4 gave an insight into the statistical relationships between livelihood factors applied in this study and income. It took account of the whole sample population. However, as earlier discussed in Chapter Four, different people and households have different circumstances or assets which affect their vulnerability. It became necessary to separate the data collected into groups that share identical attributes to investigate how the eight aforementioned variables (Section 5.6.2) affect the various groups and which factors mean so much or so little to certain households.

The disaggregation of household data led to identification of ten different groups of households in the study area. The ten groups were based on the level of farm size, education, farm income, non-farm income and household income. Households were grouped into small vs. large farm size, low education vs. high education, low farm income vs. high farm income, low non-farm income vs. high non-farm income and low household income vs. high

household income. The result of multiple linear regression analysis is discussed in section 5.8.1 – 5.8.11 and presented in Tables in Appendix 4 (Table 4.1 – 4.11).

5.8.1. Small farm households

Small farm households comprise of households that farm on less than 2.0 hectares of land. The mean farm size for this group is 1.08 hectare (1.96 for the study population). The average crop, farm, non-farm and household incomes in naira were 30590, 51740, 72600 and 126100 respectively. The averages for the whole sample in naira were 83050 (crop income), 121290 (farm income), 94070 (non-farm income) and 215360 (household income). Household labour force, financial capital, age and infrastructure did not show any significant correlation with income since these are mainly small scale farmers, whose main aim of farming is to feed their families. Education, farm size, percentage of farm land owned and ownership of non-farm enterprise were all significantly correlated with household income (Appendix Table 4.1).

5.8.2 Large farm size households

Large farm households cultivated between 2.0 – 5.0 hectares of land. They represent households whose main occupation is farming since they have access to large area of land. The mean farm size was 2.41 hectares, which was above the 1.96 for the whole population. The average crop, farm, non-farm and household income in naira were 109030, 149090, 104050 and 256080 respectively. These were above the averages for the study population.

Regression analysis showed that the proportion of farm land owned and farm capital are not significantly correlated with household income. The other factors, household labour, education, age, farm size, financial capital, ownership of non-farm enterprise and access to basic infrastructure were all correlated with household income (Appendix Table 4.2).

5.8.3 Low Education households

This category of households includes those who do not have any formal education and those who never got beyond primary school level education. The mean years of education were 3.68, nearly half that of the study population average (6.89). The average farm size was 1.74 hectares and percentage of farm land owned was 58.7%. The average crop, farm, non-farm and household incomes in naira were 64060, 90030, 54030 and 147060, respectively. These were below the mean figures for the study population. It was observed that all the variables were significantly correlated with household income, except age (Appendix 4.3).

5.8.4 High Education households

This group consists of head of households who attended secondary to higher education. The mean years of education are 11.82, which is well above the average of the study population. Average farm size is 2.32 hectares and is above the average for the whole population, while the percentage of farm land owned is 80.2%. The mean crop, farm, non-farm and household income in naira were 112040, 158080, 115040 and 314040 respectively. These figures exceeded averages of the study population. Household labour force, education, age, farm size and financial capital were significant at 1% level with household income. On the other hand, percentage of farm land owned, ownership of non-farm and infrastructure did not show any significant relationship with household income (Appendix 4.4).

5.8.5 Low farm income households

The mean farm size and years of education for low farm income households were 1.48 hectare and 5.16 years respectively. The average percentage of farm land owned is 56.3%. In this category were households who earned annual farm income below 110000 naira. The average crop, farm, non-farm and household income were 42036, 62093, 75062 and 142020 respectively. These were below the average figures found for the entire population. Household labour, education, farm size and percentage of farm land owned were all significantly correlated with household income, where as age, financial capital and ownership of non-farm activity were not (Appendix Table 4.5).

5.8.6 High farm income households

The average farm size, years of education and percentage of farm land owned by high farm income households were 2.61 hectares, 9.08 years and 81.1% respectively. This group is made up of households earning farm income of more than 110000 naira per annum and are mainly medium to large scale farmers. The mean crop, farm, non-farm income and household income in naira were 135770, 188060, 116850 and 304930 respectively. These were well above the averages observed for the whole population. Household labour, education, age, farm size and financial capital were all significantly correlated with household income (Appendix 4.6). These are households engaged in full-time farming, although some or most still take part in non-farm work, either part-time or during off-farm seasons.

5.8.7 Low Non-farm income households

This group is made of up people who are fully engaged in farming work but undertake non-farm employment or business on a small scale or part-time basis. These are households which earn non-farm income of less than 100,000 naira. The mean farm size, education (years), and percentage of farm land owned were 1.78 hectares, 4.56 years and 59.2% respectively. Also, the mean crop, farm, non-farm income and household income in naira for this group were 66400, 97130, 51080 and 151,090 respectively. These incomes were below the average recorded for the whole population. All the factors regressed with household income were significantly correlated with household income at the 1% level, except age (Appendix 4.7).

5.8.8 High non-farm income households

These are households which earned non-farm income of more than 100,000 naira per annum. Head of households in this group are employed full-time in non-farm activities or manage non-farm enterprises, while still engaging in farming. Despite earning high non-farm income, this group of households has more farm size, and earns more crop, farm and household income than the low non-farm income households. The average farm size was 2.38 hectares, education (11.66 years) and percentage of farm land owned (83.7%).

The mean crop, farm, non-farm and household income in naira were 118410, 106580, 182290 and 342990 respectively. These figures were all above the averages recorded for the entire study population. Household labour, education, age, farm size and financial capital were significantly correlated at the 1% level with household income. Percentage of farm land owned, ownership of non-farm income and infrastructure did not show significant relationship with income (Appendix Table 4.8).

5.8.9 Low Household income

In this group of households are those which earned an annual household income below 200000 naira. The mean values were farm size (1.45 hectares), education (4.28 years) and percentage of farm owned (51.7%). Similarly the mean crop, farm, non-farm and household incomes in naira were 43450, 68680, 50540 and 117560, which were all below the average for the study population. Four factors were found to be significantly correlated with household income (household labour, education, farm size and financial capital). The other three factors were not (Appendix Table 4.9). This group comprises of the majority of the poor

households of the study population. They are characterised by low farm size, low education, low farm capital, low farm and low non-farm income.

5.8.10 High Household income

These are households whose annual incomes exceed 200,000 naira. The average farm size, education and percentage of farm land owned were 2.52 hectares, 9.67 years and 83.6%, respectively. The household income averages in naira were 125,370 (crop income), 169,010 (farm income), 140,590 (non-farm income) and 315,480 (total household income). These were considerably above the averages recorded for entire sample population.

Household labour, education, age, farm size and financial capital were all significantly correlated with household income (Appendix Table 4.10). This group of households comprise the wealthy or better-off. They have large farm size, are better educated, and own most of the land they farm. Ownership of land reduces the over-head costs incurred in production as there is less rental cost. They can also engage in higher-paying non-farm activities due to their high education level and skill.

5.8.11 Summary of findings from Regression on disaggregated data

A detailed result of regression analysis on disaggregated data and groups identified within the study population is presented in Appendix 4. Although eight of the factors considered in regression analysis showed similar results as for the whole population sample, there were some variations in the effects of these factors in some household groups. For instance, percentage of farm land owned is significantly correlated with household income for small farm size households but not for large farm groups and the whole population. The implication is that size of land owned is very important to households with small farms.

Education, household labour force and farm size, all have a significant correlation on household income of all groups investigated. It implies that these three factors are important to all kinds of households. Diversification or ownership of non-farm enterprises was significantly correlated with household income for households with small farms, large farms, low education and low non-farm income.

The implication of this finding is that diversification is good to both small and large land holders. Access to basic infrastructure (tarred roads and electricity) have the same influence on household income for large farms, low education, low farm income, low non-farm income

and low household income. Full details of the regression results are presented in Tables 4.1 to 4.11 in Appendix 4.

5.9 Summary of effect of selected variables on Determinants of income

In analysing determinants of household income variations, eight factors (variables) were adopted from literature during the research design and were chosen on the basis of their relevance to households in the study area. People and households differ in their ownership of assets (human and capital) and their vulnerability. It is important to understand how internal and external factors influence or determine livelihood outcomes. Analysis of mean values for the four categories of income (Appendixes 4.12 and 4.13) showed that there were variations in income according to household characteristics.

The mean household income and non-farm income (400820 and 205550 naira) for households where the head of household have higher education (14 – 16 years) were almost double to those head of households with 8 – 12 years education (231880 and 104380) despite both having a nearly equal sample size of 44 and 45 respectively. The education group 0 – 4 years and 5 – 7 years, despite having about 76 and 73 households, had lower household income and non-farm income (119990 and 37030) and (17884 and 72930) in naira respectively (Appendix 4, Tables 4.12 and 4.13). With age, head of households aged 30 – 50 years earned more non-farm income than those of 51 – 72 years old with mean values of 106830 and 79730 respectively. However, the 51 – 72 years age category earned more crop and farm income (102320 and 146000) as against 65900 and 91520 for 30 – 50 year olds.

In terms of the effect of household labour force, households with one working adult recorded mean values in five digits for all income categories, whereas six digits figures were recorded for households with two or more adult-working members in their households. A similar pattern was observed for farm size categories of both small and large farm size (households on less than 2.0 hectares and 2.0 – 5.0 hectares). Ownership of non-farm enterprises, financial capital (amount of savings) and access to infrastructure all displayed similar results (Appendix 4, Tables 4.12 and 4.13).

Chapter Six

Rural Business Environment: Qualitative findings

6.0 Introduction

Quantitative analysis could not provide a full explanation as to why some people are able to pursue their livelihood opportunities and why some could not. Statistical analysis in Chapter Four and Five requires more inquiries so as to understand the factors affecting livelihoods and what people are doing to improve themselves economically and otherwise. It becomes necessary to explore the factors that influence livelihood activities in the form of qualitative analysis. For this purpose, this chapter presents analysis of qualitative findings on rural livelihood, identifying livelihood activities and the barriers faced by rural entrepreneurs.

Livelihood diversification has been described as a process whereby individuals seek new ways to earn or increase incomes in order to reduce risks and increase welfare. One of the main problems identified in the review of literature on livelihoods in Africa is that most of them focus on agricultural production, food security, land and poverty. Most of the literature focuses on agricultural production as the main driver for reduction in poverty and food insecurity (WDR 1993, Christiaensen & Demery 2007, WDR 2008, Montalvo and Ravallion 2009, Cervantes-Godoy & Dewbre 2010, Obikel *et al.* 2011).

This trend has led some authors into associating people's vulnerability with lack of land and farm sizes (World Bank 2000, Deininger 2003, IFAD 2009c, Mehrota and Delamonica 2007). The major shortcoming of this approach is that it suggests that land and agriculture are the only resources for improving livelihoods in rural areas. It has been shown in Chapters Two, Four and Five that livelihoods of rural people depend on several factors, including land. Also, both farm and non-farm income sources are important activities. Several authors have shown that non-farm income constitutes a higher proportion of household income and is the primary driver of the rural economy (Gardner 2000, IFAD 2002, 2009b, World Bank 2008).

6.1 Farming

Farming comprises cropping, raising livestock and fishing activities. Cropping involves planting of staple food crops such as maize, millet, cassava, yam, cocoyam and potatoes, etc. Households also plant cash crops (such as rice), tree crops (such as mangoes, oranges, palm oil, plantains, vegetables and fruits. In the study area, farming is the main occupation and all households engage in farming either to feed the family or as a source of income or both.

Three major crops cultivated in the communities are rice, cassava and yam. However, rice production has been on the decline in the past few years due to several factors. The constraints facing farming, and in particular rice production is summarised by one farmer as:

“I used to be a large-scale rice farmer, farming on more than seven hectares for more than 10 years. But in the last 5 years, I have only managed to farm on less than three hectares. The main obstacles we face nowadays are high cost of land and high cost of production (mainly labour and transportation). Also, with high cost and limited access to fertilizers, weather uncertainty, pest and diseases and low prices received for unprocessed rice paddy, large-scale rice farming has become unprofitable in our locality” (Local Farmer).

Cassava was reported by all the vulnerability groups as the most cultivated crop and most consumed food crop in the area. Most of the high vulnerability group reported that cassava guaranteed them food security and is the most staple food consumed in the villages. Twenty heads of household of the high vulnerability group in the survey stated that cassava enables their households to fulfil their basic food need and the lack of it can lead to starvation and food deprivation. Another attribute of cassava is that it can be planted in three seasons within the year, unlike rice, yam and maize which are grown once during the rainy season.

Another crop mentioned in the survey that is of high importance to food security is yam, also reported as a traditional crop of the study area. One of the attributes of yam mentioned during the survey by most households is that it can be stored easily in the barns after harvest and sold during the off-season for higher prices. It was observed that only about one-third of the high vulnerability households reported cultivating rice, whereas nearly 80% of moderate and low vulnerability households engaged in rice cultivation. This is because rice farming is mainly planted on paddy land which is not evenly distributed among households and because of the high cost of paddy land, only the well-off can afford it. It was also observed that rice attracted higher labour costs than for other crops and required high cost inputs such as fertilizers, improved seeds and pesticides, which only a few households are able to afford.

Livestock practices are carried out by people keeping animals at home in a free range system. The animals commonly kept are goats, sheep and chicken. Only rich households keep cattle and pigs. The motives for engaging in livestock farming are defined by access to capital, assets (land) and choices, which vary among households. For most households, livestock activities serve as a source of financial capital (savings) and security for crop income failure. The majority of households (about 45%) reported keeping livestock as source of extra income

and they are sold when there is need to raise capital for household investment plans (for example, buying more land or financing children's education). Other attributes of livestock mentioned by about 30% and captured by one of the respondent's statement were:

"We keep livestock for traditional and custom reasons, because livestock serve as ceremonial assets, used during ceremonies such as funeral services, marriage, gifts and as a form of savings for emergency funds due to lack of banks in the villages" (Local farmer).

The majority of the households in the study area are engaged in farming mainly to feed their households. About 41% of the households stated their main purpose of farming was to feed their households, 25% maintain farming provides a source of extra income, 24% were engaged in farming as a source of income, and only 10% of households as wealth generation. None of the households reported engaging in either crop or livestock activity to accumulate wealth. Livestock was kept by 25.4% households in order to feed their households, 29.2% as a source of income and 45.4 regarded their livestock activity as a means to earn extra income.

Farming is still carried out in a traditional method with crude implements. About 85% of households have used the same farming equipment (hoe, diggers and cutlasses) since they started farming. Investment in farm equipment remains very low in monetary terms to the extent that all respondents own on average less than 100,000 naira worth of farm equipment, which is not enough to buy even the simplest farm machine. Further analysis showed that about 88% of households own farm equipment valued at 50,000 naira or under. In terms of changing farm activities, the study reveals that about 40% of households have grown the same crops and kept the same type of livestock since they started farming.

For agriculture to be productive, investment is needed in farm machinery and inputs such as fertilizers. Also, extension services are needed to educate rural people to adopt improved new varieties of crops and animals. It was observed that a majority of the households (52%) have never received agricultural extension advice on new technology and methods of farming. Subsistence and primitive farming have proved to be insufficient for increasing income or taking people out of poverty.

Farming takes place yearly during the rainy season, which lasts from April to October (due to lack of irrigation systems). During the dry season (November – April) there is less farming activity. Most of the full-time farmers maintain that they take to non-farm activities to sustain

their income throughout the seasons. On the other hand, small-scale farming households engage in non-farm employment to sustain their income all year round.

6.2 Non-farm opportunities

Non-farm opportunities comprise both skilled and unskilled labour and wage employment in the non-agricultural sectors in the rural areas. They also involve ownership and management of small-scale manufacturing, processing, trading and other off-farm activities. In terms of relevance to livelihood survival, non-farm sources of income serve as the most important sources of income for about 52% of households while only 48% of households regarded farming as the most important source of household income.

Fabusoro *et al.* (2010) suggests that the upward trend in non-farm activities is likely to have been caused by a degree of rural transformation that has taken place since 1999 in Nigeria. The advent of democratic rule since 1999 has brought about considerable infrastructure development of many rural communities (*ibid*: 432). This has provided favourable economic conditions that increase entrepreneurship opportunities in the rural areas.

Review of literature (Chapter Two) showed that diversification is aimed at reducing risk in farming caused by weather uncertainties, and incidence of pests and diseases. It is also due to seasonality of agriculture production (since farming depends only on rain water), that people take up non-farm activities in small-scale local manufacturing, processing and trading in order to supplement farm income. Other factors mentioned in the literature as to why people are taking to non-farm activities are low farm income, lack of land and capital. There was a decline in the number of households relying on farming as sole employment and an increase in households combining farm and non-farm employment over the past five years. Findings suggest that high and moderate vulnerability households combine both farm and non-farm activities in order to guarantee regular income by diversifying their investments or seeking labour or wage employment in both farm and non-farm sectors. On the other hand, low vulnerability households stick more to one activity in either farm or non-farm sector.

Most of the households in the high vulnerability group state that they engage in non-farm activity because it provided day to day income, unlike farm income which is available only during harvests and market days. Most of the activities reported were food processing, on-farm and off-farm labour, small-scale manufacturing (crafts, tobacco, wine, gin, etc) and artisanal trading. It was observed that high-energy demanding off-farm and on-farm labour

activities employ mostly men, while women are employed in on-farm labour such as weeding, planting and harvesting. Women dominated the food processing and trading activities. They also engage in other activities such as dress making and hairdressing.

Non-farm jobs are also better remunerated than farm jobs. The average payment received in naira per person per man-day in the study area was 1633.96 (farm work) and 2090.21 (non-farm work). Sometimes, these payments are based on gender and age, for work done by women and children aged between 12 – 17 years, when intensity and skill could be used to determine payments. When payment is discriminated among gender it could lead to women being prone to poverty (where both men and women are providers of family needs) since females earn less and still perform the role of providing their households needs.

According to the World Bank (2008), wages are considerably higher in rural non-farm employment than in agricultural wage employment. In the rural non-farm sector, men's wages are higher than women's, although the difference is small in Africa, where employment is mainly in very small firms (ibid: 213). Education and skills are very important factors determining rural people's capability to engage in low or high paid jobs.

The importance of non-farm activities for households in the study area is demonstrated by the distribution of the motives for engaging in non-farm employment among households. Analysis of income distribution in Chapter Four showed that non-farm income make-up about 44% of household income. Several livelihood surveys discussed in the literature review (Chapter Two) have also reported a higher proportion of non-farm in household income. The motives for taking-up non-farm vary between households, although 47% of households maintain that non-farm activity served as main source of household income, 43% stated it was a means of extra income, and only 10% were engaged in non-farm as a source of food.

6.3 Vulnerability context

Livelihood strategies involve decisions; actions, management and organisation people undertake in order to effectively utilize the resources available to construct a living (DFID 2007). About 50% of households maintained that life was a struggle and that they were living in poverty. When asked if their various incomes provided enough for households and consumption needs' only 12% affirmed, while 88% of households reported otherwise. This condition leads families to seek further sources of income in addition to farm and non-farm activities such as remittance, natural resources and sale of assets.

The majority of the households (66%) reported engaging in natural resources activities; only 34% of households do not. The various natural resources sources of livelihoods from which households derive extra income or rely on as a main source of income include forestry (44% of households). Others sources are water/rivers (14% of respondents) and sand/stones (8% of households). It was discovered that natural resources are sometimes relied upon by households in order to meet food consumption needs, especially the poorer households.

According to one head of household, “poorer people like me who have little or no land and capital for farming, no education and skill to set-up non-farm businesses or migrate, depend on natural resources as a source of income and food in order to supplement farm foods during periods of low labour demand, which is the main source of our income”.

The sustainable livelihood approach and framework discussed in Chapter Two showed that the ability of people to pursue their livelihood depends on the type of assets they have access to or own. Five assets were mentioned that determine people’s capability and ability to pursue their livelihoods – human, natural, physical, financial and social capital. Analysis of determinants of livelihood structures in Chapter Four and Five identified some factors which influence income formation. Statistical analysis which these factors were subjected to show they were relevant to income formation but did not explain why and how they prevent or aid people to construct their livelihoods, which led to the qualitative analysis discussed in Section 6.3.1 - 6.3.4.

6.3.1 Education

Education is an aspect of human capital that is mentioned in the literature that determines livelihood capabilities. There is low level of education among rural people in the study area. The majority of men and women are not educated and those who are, only achieved primary education. This is not enough to be able to gain high paying jobs which the non-farm sector offers. These people are left with no choice other than farming and off-farm paid labour in order to make a living. For those who engage in small-scale production, services and trading in the non-farm sector, they lack sufficient knowledge and the skill required to manage and operate non-farm businesses successfully.

The high vulnerability households showed very little education attainment. Of the 164 heads of household classified as high vulnerability group using education as a criteria, their mean education was 4.5 years, whereas, the moderate vulnerability households (49 heads of

household) was 9.04 years of education and low vulnerability group with 27 heads of household was 12.93 years of education. The majority of the low vulnerability group were reported to own non-farm enterprise or engaged in better paying jobs in the non-farm sector.

Lack of education also poses a barrier to getting information on modern technology and the processes of securing capital such as loans and grants from banks and government sources. The level of education is also a major migratory factor. Of the 439 household members reported to have migrated, 71% had secondary or higher education, while only 29% had primary or no education. Also, 294 are males and 145 are females. It showed individuals with better education are more likely to participate in the non-farm employment or migrate.

One of the main factors behind the high level of illiteracy is ignorance. Households in the study area maintain that they did not know or attach much importance to education, in the past. However, they are becoming increasingly aware of the importance of education. Most families nowadays invest in education of their children as a strategy for escaping poverty in future. They see education as a means whereby educated children can get better paying jobs in future and are able to change their family's circumstances. Other problems associated with why people are unable to acquire education have been lack of schools within their villages, low income, high cost of schooling and time/labour demands of large-scale farming.

Primary and secondary schools are located far away from people and it discourages children from attending since they have to walk many miles to reach the closest. Poor facilities, high school fees and quality of teaching also discourage those who desire to get educated. All the villages sampled had primary schools but only about half had both primary and secondary schools. High costs of schooling result in women being discriminated against by households in the decision of who goes to school and who does not, based on available resources. This has resulted in a lot of uneducated women in the study area, who are confined to early marriages, home duties and farming activities.

Large-scale farming was also reported as a reason why some children were unable to obtain education. Agriculture demands a lot of time and resources. For young people who make efforts to attend schools, there could be interruptions whereby children are withdrawn during school term to participate in farm work and other migratory activities in the urban centres. This is one of the reasons reported as to why there is low school enrolment since children are made to work in farms or rear animals and absent themselves from schooling.

6.3.2 Labour constraints and opportunities

Most of the households noted that there is high cost of labour in the study area. The reasons given as to why there is high cost of labour range from high rate of migration among youths and school leavers, competition from urban centres for local labour, the lack of interest of educated youths to engage in farming work or seasonal labour jobs and the tediousness of farming work with local tools and equipments. For these reasons, the number of adult working members of a household determines the scale in which people could participate in farming and non-farm work.

The amount of labour available is important as well as the quality of such available labour. It was observed that the majority of the labour in the study area was unskilled, the same trend as education attainment. For those who received skills and apprentice training, the urban centres offered more opportunities and better remuneration to apply their trade than the rural areas. Quality of labour is achieved if people are well educated, trained or have skills that can help them manage or operate their income activities. Scarcity and high cost of labour can lead to high production costs and low profit, and in some cases result in children being taken off school to work in farm and non-farm activities.

Farming is also carried out in primitive ways; as a result, young people tend to shy away from engaging in it. One way of reducing the scarcity and high cost of labour is through mechanization. Primitive and subsistence farming does not offer the scope for households to increase their income and for the younger generations to be actively employed in agriculture.

According to one of the respondents “young people regard farming as work for the older, local uneducated men and women. They would rather migrate to the cities to take-up non-farm work, trading, administration, construction and mining. This is why there is high cost of labour in the village”.

The above views on the state of farming in the study area are also shared by about 60% of heads of household. Farming in the study areas depends on crude implements. This is not only time consuming but also energy demanding and leads to low productivity. About 85% of households have used the same equipment (hoe, diggers and cutlasses) since they started farming and this does not provide efficiency of labour. With modernisation, young people will take to farming but they will still have to face the problem of lack of land and capital.

6.3.3 Farm size

It was observed that one of the reasons why there is low farm income in the study area is because of the dominance of small farm holdings. Also, the reason for small farm size is the result of high cost of purchased land. In addition, the low prices received for agricultural produce means that households are scaling down operation. Non-farm jobs are offering more attractions to the younger people and youths and as a result, households are witnessing lower family labour willing to participate in farming and as a result farmers are down-scaling agricultural production. Another reason mentioned for why there is small scale farming is the lack of financial capital and credit. It was observed that households are only able to use their personal savings to finance investment opportunities or increase their production.

“We need money to buy more land, employ more labour, buy inputs and transport farm produce. With low farm income and absence of loans from government and banks, we can only farm on the scale we could afford from our personal savings. Also the demand for money for other family needs means that we sell some part of the land in our possession to improve our homes or fund our children’s education” maintains one of the respondents.

Farm land in rural areas continues to be fragmented and families are increasingly becoming landless (Gaurba 2006). The tenure system makes acquiring land very difficult; it was observed that the usual way of acquiring land is by inheritance. As a result, land available to a household is split among adult male children; most of them end up having just small portions. In most cases women are discriminated against since some traditions forbid women from inheriting land from parents or their husbands.

Where families have access to a large area of farm land, the ever increasing need for home improvement, start-up capital for non-farm businesses and children’s school fees compel families to sell off part of their farm land in order to meet these financial demands. Sale of land is the most reported source of raising funds among the households. Diminishing fertility of farm land due to continuous cropping and lack of access to fertilizer has also resulted in low productive land use. Households therefore sell off such land for commercial or property development and engage in other income activities, especially in the non-farm sector.

Analysis of ownership of land showed that the proportion of land owned is more important to small-farm households but not large-farm holders. For small farmers, costs of renting land could be financially demanding as it increases the over-head costs of farm production. But for

large farm households, the determining factors are type of crops grown, availability of new improved varieties, fertilizers and prices of farm produce. The large-farm holders are known to grow cash crops that attract high farm gate prices, such as rice, yam and cassava, so they can offset the cost of renting land. Poor households were observed to keep only chickens and a few goats and sheep, whereas the rich ones keep flocks of sheep, goats and cattle.

In some communities, tradition forbids people from selling land to non-indigenes or to non-family relations. In such communities, value and prestige is attached to ownership of land, making it difficult for people who want to expand farming to acquire land. Due to the high population growth rate, land is becoming scarce, since the most usual means of acquiring land in rural areas is by inheritance; splitting among households' adult members is practiced and this leads to fragmentation.

6.3.4 Financial capital

Findings reveal that the most important source of capital for investment or expansion of farm and non-farm activities is capital held in the form of savings. In the villages, savings are mostly held in the form of stored crops or as stock of livestock animals, due to the non-existence of banks. Stored crops and livestock are sold during planting seasons to buy farm inputs such as fertilizers and seeds or to hire labour. In times of necessity or shortage of funds, farmers sell-off part of their land to raise money or borrow. The main source of borrowing or securing credit is informal money lenders who charge extraordinary interest rates and give only short duration loans of between one and six months.

The lack of education means that the majority of households do not know how to apply for formal loans and credit. Nearly 75% of households reported that they do not have enough information on how to apply for loans; only about 30% of households have access to banking services. The literature has shown that past government interventions in Nigeria aimed at providing accessible rural micro loan schemes failed to reach the desired targets (Gaurba 2006). The same is true with other government schemes such as fertilizer, improved seeds and insecticides, which have been poorly implemented and funds meant for the schemes corruptly misappropriated by government officials. Where such of the loans or subsidy eventually reach their targets, they arrive too late, and become ineffective or useless.

6.3.5 Infrastructure

Infrastructure is part of the physical assets that affect rural livelihoods. It is used to describe the state of public utilities, goods and services at the disposal of communities. It includes good roads, provision of clean water, electricity supply, schools, hospital, telephone and postal services. These structures to some extent determine what people can do and cannot do to improve or increase their income and also determine livelihood outcomes. It was observed that the state of infrastructure in these communities is poor. They lack paved roads, clean water, electricity, telephone, hospitals and postal services. The quality of school buildings, facilities and equipment are below the standard that will offer quality education. Hospitals, schools and sources of clean water are located several kilometres away from the villages.

Of the households sampled, about 73% of them do not have their homes connected to a public electricity supply even when there is a power supply in their communities or nearby villages. On the other hand, one third of the households (six communities) live in villages/communities not connected to public electricity. Where electricity is available, power supply is unreliable with an average of 12.5 days without electricity per month in most cases. In such a situation, it is very difficult to manage and operate businesses.

The most common means of community transport are buses, trucks, Lorries and motorcycles. These means of transportation are privately owned and are not regulated by government. The consequences are high transport costs and an unreliable transportation system which increases overhead costs of production and marketing. This situation is further compounded by bad or inaccessible roads. About 53% of households (10 villages out of 20 sampled) are located in villages without a paved road network. This hampers production, marketing and transportation, resulting in lower agricultural prices and spoilage of perishable farm produce.

Health care in most of these communities is poor and people travel miles to reach the closest hospital or health clinic. Only about 48% of households have hospitals or health clinics located in their villages. The remaining 52% of households (located in 10 villages), travel to nearby villages or undertake long journeys to receive treatment. Productivity is achieved when there is good health among the population. The World Bank (2008), maintain that children and women are mostly affected, where there are inaccessible health delivery services.

None of the communities in the study area has access to a fixed telephone line and postal services. However, mobile phone communication is common among households. Nearly all the households reported that they have some members that own mobile phones. This is one of the developments that have taken place in the rural villages since the return of democracy in Nigeria. It was observed that mobile phones have created new jobs for the youths in the local communities (for example, mobile phone call centres). It also offers opportunities for better communication and information dissemination. Migrated members are also able to send remittances through mobile phones in various ways. Above all, mobile phones assist the local people to keep contact with customers residing in other villages or in the cities.

The most common source of water is deep wells or bore holes and dams. In some communities women and children travel miles in search of clean safe water, thereby spending precious time and energy which would have been utilized better in farm work or schooling. Lack of clean drinking water is also associated with illness and diseases in rural areas. A person's well-being has potential consequences for his overall productivity in-terms of amount of energy and time he puts into income generating activities.

6.4 Barriers and Constraints facing Rural Businesses

Community information on resources, management and facilities were collected during the household survey. The aim was to understand the problems encountered at community level in managing and operating farm and non-farm businesses. It provided answers to some research questions developed at the beginning of the study. It is assumed that knowledge of community-based issues could be used to better understand the behaviour of households and the decisions they make in pursuing their livelihoods.

Some of the constraints affecting communities in the realization of their livelihood targets are discussed in section 6.4.1 – 6.4.5 and also presented in Tables in Appendix 2 and 3. In livelihood studies, the literature shows that understanding the needs of both households and community is crucial in addressing rural issues and poverty (Drinkwater and Rusinow 1999).

6.4.1 Access to fertilizer and other farm inputs

Farming, as stated earlier, is the main occupation of rural people but they are continually faced with problems of securing fertilizer and improved planting material to maintain production. Access to fertilizer was the most reported obstacle facing farming. The 'state'

regulates the supply and allocation of fertilizers to farmers through local government councils. Private individuals are also involved in the distribution and marketing of fertilizer.

Despite these two sources, fertilizer always becomes scarce during planting seasons when it is needed. Prices double or triple, making it too expensive for poorer farmers. It is believed that middlemen create artificial scarcity of the product to get high prices. When government allocations eventually arrive, they do not meet the demand or they arrive too late for the planting season. This situation is also encountered in securing other inputs and grants from state agencies. Five of the respondents even reported having given up-farming (for income) due to the lack of fertilizer and now engage in farming for their own consumption.

6.4.2 Prices and inflation

One of the problems affecting people in remote villages is the prices they pay for goods and services. Price inflation rate is so high that they end up paying high prices for farming inputs, equipment, transportation and labour cost. Closely linked to this problem is lack of good roads and an efficient transportation system, as these goods and services attract extra costs. Prices of some goods and services were collected over five years and the study found that some prices have increased by as much as 60% over the period. For instance the average price for fertilizer in 2005 was 5500 naira per 25kg and the price in 2009 was 8000 naira (prices of other commodities are presented in Appendix 5).

In the villages, households reported that there has been a rise in prices of industrial goods and services over the years, which do not apply at the same rate to their farm produce. Hence, prices of agricultural products and land change slowly over time unlike non-agricultural commodities. The study collected prices of farm crops such as rice, cassava, yam and maize and livestock (chicken, goats, cattle, and sheep). It found inflation changes of about 50 – 60% over five years for non-agricultural commodities and only about 20 – 40% increase in agricultural commodities over the same period.

6.4.3 Marketing

The rural marketing system involves selling and distribution of agricultural and non-agricultural products. It is a complex system which differs from marketing processes in cities, due to lack of basic infrastructure and remoteness. The situation is that the majority of farmers sell locally at farm gate prices to local people or middle men. In the process, they

receive low prices that do not guarantee a return for investment. The middlemen go on to incorporate transportation costs and profit margin which they push on to the consumers.

These farmers continually produce and sell at prices just enough to break even or just to reduce wastages and spoilage. Most agricultural produce requires processing to get to the final product that attracts higher prices. For instance, farm gate prices for rice, cassava and palm oil are usually low but once processed the prices could be reasonably high. The local farmers are forced to sell to middlemen, who go on to process, store and sell at high prices, because they have access to processing machines, which the local farmers do not. Farmers also cannot afford the additional costs required for processing and transportation.

There is also missing market for land over the years. Although there have been high inflation rates in industrial goods, rural land prices increased at a slower rate. The literature shows that missing market can pose a major entry barrier into some activities or assets. For example, Barrett *et al.* (2001) maintain that smallholders typically cannot afford to purchase a truck and enter the long-haul transport niche of food marketing channel, no matter how profitable it might be. On the other hand, where non-farm offers a steady income, it can offer the means of overcoming lack of start-up or working capital in the farm and non-farm sectors (ibid: 10). The authors maintain that observed diversification of labour activities and income for some individuals could be attributed to the absence of market for land.

6.4.4 Competition

Local competition exists when local goods and services have to compete with urban industrial commodities, imported goods and services. There is competition both in prices and quality of goods and services. The rural sector is faced with producing goods and services with limited access to modern machinery. As a result, local goods are regarded as inferior to industrial goods. Similarly, labour in cities is seen to be more skilled and trained and sometimes preferred to rural labour. Local people are therefore overlooked by employers, who prefer to engage urban labour, only employing the local people on labour intensive jobs that require fewer skills.

6.5 Summary of Qualitative findings

The study observed that assets (land, financial and human capital) and infrastructural facilities available to rural people determine their livelihood vulnerability. However, in their efforts to construct a living from assets and resources available to them, certain barriers and

constraints prevent or hold people back from achieving their maximum targets. These constraints include lack of farm inputs (at the right amount and time), lack of capital or credit sources, low level of infrastructure, poor market and low prices for rural goods and services, inflation and competition. These factors make it unfavourable to operate and manage livelihood activities. Therefore, diversification is crucial to sustainable livelihood in rural areas.

The notion of farm and non-farm linkages (forward and backward linkages) describes the relationship between the agricultural and non-agricultural sectors. The expenditure linkage involves the use of incomes generated in one sector to purchase the output of the other. For instance, land could be sold to fund investment in non-farm businesses which have potential for higher income returns. The income generated from such non-farm business may be re-invested back into farming to increase or improve production.

Public policies, such as provision of infrastructure, education, credit/micro-financing and land policies, determine people's ability to effectively harness resources for a sustainable livelihood. These factors facilitate farm and non-farm linkages, and expenditure linkages. For instance a good road network creates a rural sector in which there is an effective marketing system and rural – urban interactions. It has been shown by several researchers that a rural economy with urban-rural interaction will facilitate a better marketing of agricultural produce. The result is an increase in income generating activities in both farm and non-farm sectors, which leads to higher household income and a reduction in poverty.

Chapter Seven

Discussion, Findings and Conclusions

7.1 Discussion

This research argues that diversification into non-farm activities is a pre-condition for farming households to increase their income and a strategy to escape poverty. Data and evidence generated from literature and the household survey show that this trend has been established in many developing economies and in the study area.

The study set out to investigate the factors that affect asset formation by employing the sustainable livelihood framework described in Chapter Two, Section 2.1.4, 2.1.5 and 2.1.6. These factors include human capital (age, education and labour), financial capital, infrastructure, ownership of non-farm and land (ownership and farm size) which were explored in the literature in Chapter Two, Section 2.2.1 – 2.2.6. The study further explored the linkages between farm and non-farm sectors that formed part of the rural transformation process in Chapter 2, 2.1.7 and the pathways out of rural poverty in Chapter 2, 2.1.8.

Although farming is a major channel in rural income formation and poverty reduction, families frequently choose to allocate their time and labour to various non-farm activities. Typically, most households cannot leave farming as it has become a tradition and also serves as a source of food. The determinants of household income were explored in the quantitative analysis (Chapter Five, Section 5.6 – 5.7) to show the impact of the selected factors on household income. Eight of the factors employed in the qualitative analysis included age, household labour force, education, financial capital, farm size, proportion of land owned, ownership of non-farm and level of infrastructure. These factors were also employed to analyse disaggregated data of the various vulnerability groups identified within the study population, shown in Chapter 4, Section 4.10 and later in Chapter 5, Section 5.3 and 5.8.

Farming does not provide sufficient income due to various socio-economic and environmental barriers that face the rural economy. As a result, people collect their income from many sources, hold their wealth in the form of many assets and use their assets in various economic activities. This is why non-farm diversification has become an aspect of rural livelihood. However, the study set out to explore a better understanding of the rural environment since the quantitative results could not provide explicit explanation of what forms the decision making and choices of activities took and why some people are able to

pursue their livelihood targets and why others could not. This led to qualitative analysis discussed in Chapter Six (Section 6.3.1 – 6.3.5). It further explored the various socio-economic barriers and constraints affecting the rural business environment (high cost of inputs, marketing, competition, prices and inflation) in section 6.4 (6.4.1 – 6.4.4).

This research found that despite agriculture being the main source of employment for the majority of households in rural areas, non-farm sources provide about 44% of overall income. Ownership of non-farm activities was also significantly correlated with average household income. Given the empirical evidence of the importance and significance of the contribution of non-farm sources to average household income, it is obvious that agriculture alone cannot bring the rapid change needed in lifting people out of poverty in rural areas. Policies are needed to develop both agriculture and non-farm enterprises. Growth of these two sectors can strengthen the capacity for rural households to increase their incomes, which will increase employment and income and alleviate poverty.

7.1.1 The context

Nigeria has a large population – one of the largest in Africa – and a fast-growing economy. Agriculture employs about two-thirds of the country's total labour force and provides a livelihood for about 90 percent of the rural population (UNECA 2005). The country is endowed with natural resources that are in great demand worldwide but still about two-thirds of its population is poor (UNECA 2007). National surveys for the past 20 years in Nigeria show that poverty is most widespread in rural areas. The rural sector exhibits a higher unemployment rate than the urban and it is dominated by small-scale farming (NBS 2007). Basic infrastructure (for example, good roads) are also lacking in the rural communities.

7.1.2 Literature review and gap in knowledge

The review of literature explored the relative significance of farm and non-farm activities in the rural livelihood approach. It was aimed at providing a pattern of livelihood activities from research conducted by other researchers in different regions. The insight gained from the review of literature highlighted the importance of understanding the complex combination and linkages between farm and non-farm sectors. Carney (1998) described the livelihood of the rural poor as being determined by their portfolio of assets, including social, human, financial, natural and physical capital.

This study identifies a conceptual and empirical gap in knowledge in the literature on rural livelihood processes. Little is known about the non-farm sector in Nigeria and it is always assumed that agriculture is the main driver of the rural sector. Until 2010, Nigerian rural income was computed as agricultural income in terms of its contribution to the overall national economy by the two official Nigerian government databases (NBS and CBN).

Diversification has been reported as a norm among rural households (Barrett *et al.* 2001). However, it is not clear in the literature, if it has been a good and efficient means for increasing income and welfare. Review of literature also shows that most data used for livelihood studies reflect the macro view, since data is not collected at household level.

7.1.3 Survey design and research methods

Households were the centre of the inquiry and as such a questionnaire was designed to provide a detailed quantitative and qualitative analysis of household income activities (Chapter Three). The questionnaire was personally filled in by the researcher during the survey to overcome postal and literacy problems in the study area. Villages and households were chosen by a simple random sampling method on the basis of two criteria, remote and non-remote villages. A total of 240 households were chosen from 20 villages distributed along three geographical locations that make up the study area. Data collected was computed and analysed to address some of the questions developed at the inception of the study.

7.2 Summary of findings and contributions to knowledge

One of the objectives of the study was to explore and test hypotheses identified from the literature on determinants of household income (income, being the dependent variable). Eight factors were identified from literature and used to carry out quantitative analysis using regression. These independent variables were farm size, proportion of land owned, household labour force, age, financial capital, education, ownership of non-farm and infrastructure (Chapter 5, 5.6.1 and 5.6.2). Results showed that seven of the eight hypothesised variables were significantly correlated with household income (except proportion of land owned); their coefficients all had a positive correlation, except age. This implies that the higher any of the six variables with positive correlation, the higher the household income (Chapter 5, 5.7.1).

Further analysis was carried out to determine the various factors affecting the various components of household's income (farm income, crop and non-farm income), using the eight independent variables. The investigation revealed that four factors were positively

correlated with household non-farm income (household labour force, education, age and infrastructure), while farm size displayed a negative correlation with non-farm income. The implication of the negative correlation could mean that households with small farm size could engage or earn more in non-farm income activities than large scale farmers (Chapter 5, 5.7.2). Three of the independent variables were significantly correlated with farm income and they include, age of head of households, farm size and level of financial capital. On the other hand, household labour force, farm size and level of financial capital, were the factors which showed a significant relationship with households crop income (Chapter 5, 5.7.3).

The research also set out to describe the various sources of livelihood activities, household characteristics and economic profiles in Chapters Four and Five. It showed that the various income activities include own-farm work, off-farm labour, skilled and unskilled non-farm wage or labour, own non-farm businesses such as trading, small-scale manufacturing, production, migratory activities, etc (a list of all livelihood activities recorded in the study area is shown in Table 4.5). In addition to the regression analysis, other quantitative measurements were used to analyse data such as means, percentages, standard deviations and variance and presented in Chapters Four and Five.

The gender distribution of heads of household in the study area showed that 92% were males and 8% were females. The average age of heads of household was 53 years and about 70% of them were aged 41 – 60 years. The mean size of households was 10.4 and about 83.5% of the households had about 6 – 15 members. The main reason behind larger household size was attributed to the tendency to have more members who can assist in farming. There was a high rate of unemployment among young people, with about 63% of the households having 1 – 2 members aged 18 years and over not in any employment. The average years spent in education by all heads of household was 6.89 years and about 43% either never attended or could not complete primary education. About 26% had primary education as their highest qualification, 13% secondary, while only 18% obtained post secondary qualification.

Given all the observed characteristics, it is obvious that the majority of the population will be remaining in the rural localities for a long period of time or throughout their life time and agriculture will continue as the primary activity. Education is a pre-condition for participation in higher-return non-farm activities, while age in most cases determines the entry criterion for some livelihood activities. The study found that there was a decline from the number of people engaged in own-farm as primary sole-employment from about 51% in 2005 to about

38% in 2009. On the other hand, the proportion of households combining farm and non-farm activities has been on the increase over the same period (11.3% in 2005 and 27.5% in 2009). Three factors were reported among the households as being influential to employment changes (financial capital, income and land) shown in Chapter Four, Section 4.5.

Farm income constitutes about 56% of household income and is the primary activity reported by the majority of households (53%). Farming is practised by the majority of households on a small scale. The study found that nearly 66% and 80% of households own and farmed between 0.1 – 2.0 hectares of land respectively. Findings indicate a downward trend in the number of big-farm households and an increase in small-farm households in the past few years. Analysis showed that an increase from 56% (2005) to 66% (2009) of households that owned between 1.0 – 2.0 hectares of land, while 44% and 34% of households owned large farm land exceeding 2.0 hectares in 2005 and 2009 respectively. Farm size followed a similar trend; 75% of households in 2005 to 79% in 2009 (farming on small farms) and from 25% in 2005 to 21% of households in 2009 farming on large-farm size (Chapter 4, Section 4.2).

Non-farm activities contribute nearly half of household income (about 44%). In terms of overall contribution to household income, measured by mean values, non-farm activities provide 94070 naira, followed by crop income of 83050 and livestock 38341 naira. The study found that nearly all households derive income from non-farm sources. One or more members of all households reported to be employed in the non-farm work, operate or own non-farm activity. About 68% of the households own a non-farm business. Of the various non-farm activities recorded, production and processing was undertaken by 48% of households, trade and merchandising (30%), services (14%) and other activities (8%). Most of the enterprises were family owned (about 51%) and the enterprises were unregistered informal activities (Chapter 4, Section 4.7.1 – 4.7.4).

Non-farm income is a major source of household consumption expenditure, capital for expansion of agricultural production, home improvement and children's education. In the study area, investment in children's education is being seen by households as a strategy and a potential route out of poverty. The study found that non-farm income is important to both small and large-farm households and it is a good means of increasing household income. Households with small farms undertake non-farm employment (especially off-farm, on-farm labour food processing and marketing), while the large-scale farmers diversify their income into small-scale manufacturing and processing, commodity trading, transportation and

services). The study found that women dominate food processing and marketing. They also engage in on-farm labour services such as weeding, planting and harvesting.

Findings showed that households earn more from paid non-farm labour and services than in farm labour work and services. The mean daily payment in farm work was 1634 naira while non-farm earning was 2090. The high cost of farm labour and young people's lack of interest in farming (especially educated ones) were among the reported obstacles facing agriculture in the area (qualitative analysis in Chapter Six). There is a trend for educated household members and young people to seek only non-farm employment. The high earnings associated with non-farm employment and migratory opportunities could be the main reason why young people show a preference for non-farm employment rather than farming.

The study found that there is a high proportion of households on very low income. The mean household incomes are 117170 naira (farm income), 94070 (non-farm income) and 213220 (total household income). Further analysis of income distribution showed that a higher proportion of the population (63% of households) income were below the average of the study population. About 25% of households did not have annual income up to half of the sample average (Chapter 5, Section 5.1). As a result of the low income, the majority of the households (68%) have been exploring natural resources (forest, rivers, stones, etc) as a means of income and food generation. Other means of income include sale of assets (for example, land) and remittance from migrated household members, friends and relations.

The categorisation of income and other socio-economic attributes led to identification of vulnerability groups in the population, in order to meet the objectives of the research. Three groups were identified as high, moderate and low vulnerability. In all the factors considered, the proportion of households in the high vulnerability group (measured in percentage) was highest. The factors of consumption (about 63.3%), farm size (79.6%), education (68.3%), farm income (56.3%), non-farm income (67.5%) and total household income (62.9%) were shown in Chapter 4, Table 4.9. The vulnerability context was further applied in Chapter Five, to analyse the distribution of income among the various groups (Table 5.3) and the share contribution of the sectors by farm size (Figure 5.1) and by education (Figure 5.2).

Farm and non-farm activities in the rural area are hampered by several mitigating factors. The four most reported constraints affecting operation of non-farm activities were lack of capital, credit, access to electricity, and access to market and information reported by 39%, 20%,

19% and 11% of households respectively. Analysis of qualitative data (presented in Chapter Six) revealed some critical problems facing the rural business environment are:

- High cost and scarcity of agricultural inputs (fertilizers and pesticides);
- High cost of labour due to lack of mechanisation and migration;
- Low savings and lack of capital (micro-credit);
- High prices of industrial goods and low prices received on agricultural commodities, local goods and services; and
- Missing market for land, fragmentation and difficulties in acquiring land.

Despite these obstacles, there were potential linkages between farm and non-farm, since both contribute income for investment or expansion to each sector. However, it was found that non-farm contributed a higher capital for agricultural production. Non-farm provided about 10 – 49% of capital for investment in farming for about 30% of households and about 50 – 80% of capital for a further 70% of households. On the other hand, farm income provides about 10 – 49% of capital for non-farm investment for about 89% of households and 50 – 80% for about 11% of households (Chapter 5, Section 5.5).

7.3 Implications of the research

Rural livelihood strategies involve both internal and external processes. Internal approaches are those aimed at sustaining a steady flow of income and food to avoid deprivation and hunger. The external processes involve the type of policies put in place by governments and non-governmental organisations to assist people to pursue their livelihood, guard against economic hardship and encourage economic development.

The research set out to identify the gap in knowledge and issues in rural livelihood that will be useful for policy makers and organisations (governments, commercial and NGOs) seeking to promote rural development, implement projects which could lead to poverty reduction and economic development. This research highlights four critical issues that require policy intervention: education, land (farm size), financial capital and infrastructure.

Agriculture is still the primary livelihood activity but non-farm activities also contribute significantly to rural livelihoods. In order to guarantee that people meet their income and food needs, and generate wealth, policies should ensure the promotion of both sectors. Access to education, land, farm inputs (especially fertilizers and improved seeds), credit and market will lead to the growth of the rural economy. Access to land and financial capital are critical

factors for a move away from subsistence farming. Provision of rural electricity, good roads and credit schemes will lead to higher agricultural returns, emergence of small-enterprises, rural-urban linkages, market for agricultural products and employment opportunities.

There is a need to increase educational attendance in rural areas through programmes that promote free education (especially for the poorer households), quality teaching in the schools and easy accessibility (in terms of distance). In order to increase agricultural productivity and small/medium enterprises, people should be encouraged to form co-operatives in order to pool their resources to achieve economies of scale which will permit use of modern equipment for large scale farming, processing and manufacturing.

7.4 Shortcomings and areas for future research

The research based its findings on data collected during the household survey that lasted for six months (October 2009 – March 2010). It required respondents to give detailed accounts of their income and activities for the past five years and data represents information the respondents could remember. An annual household survey undertaken every year for the period under investigation would have been more suitable, accurate and reliable.

The study based its findings from data collected from twenty local government areas of Ebonyi State, South-eastern Nigeria. It would be worthwhile to extend the study's analysis to other regions in Nigeria. This will assist in analysing how endowment of natural resources determines income and livelihood in the various ecological zones and to compare differences and similarities in the various livelihood opportunities and strategies of rural people.

On the basis of 'this research' findings, there are prospects for further research work. There is the prospect for further detailed analysis of contribution of micro-small enterprises to economic development and growth. There is also opportunity to investigate rural-urban linkages and gender issues in rural livelihood. Finally, there is need for future research to develop a single index (standard formula) for determining household vulnerability within the rural livelihood framework.

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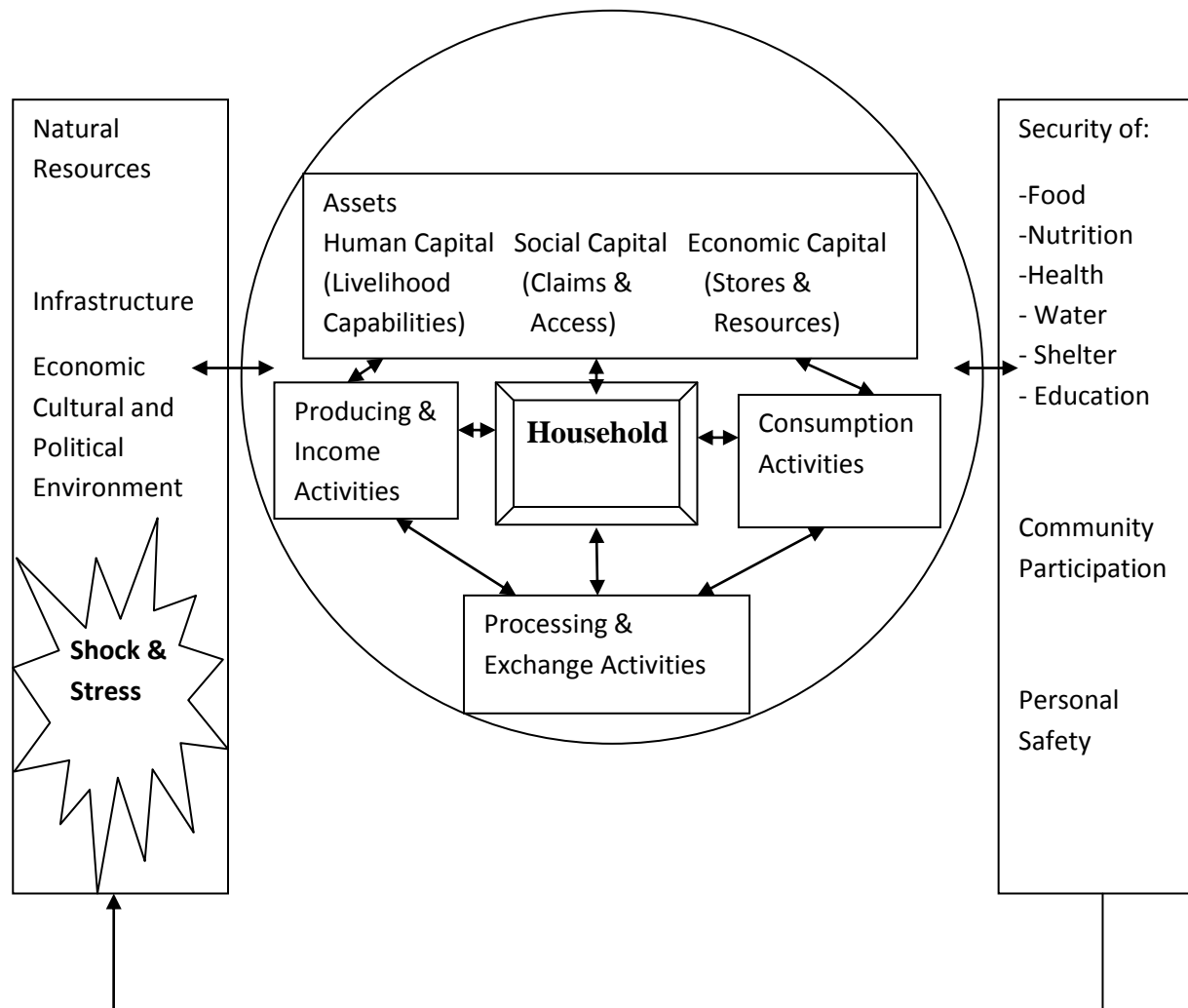
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APPENDIX 1 Models & Frameworks for gathering information on Vulnerability

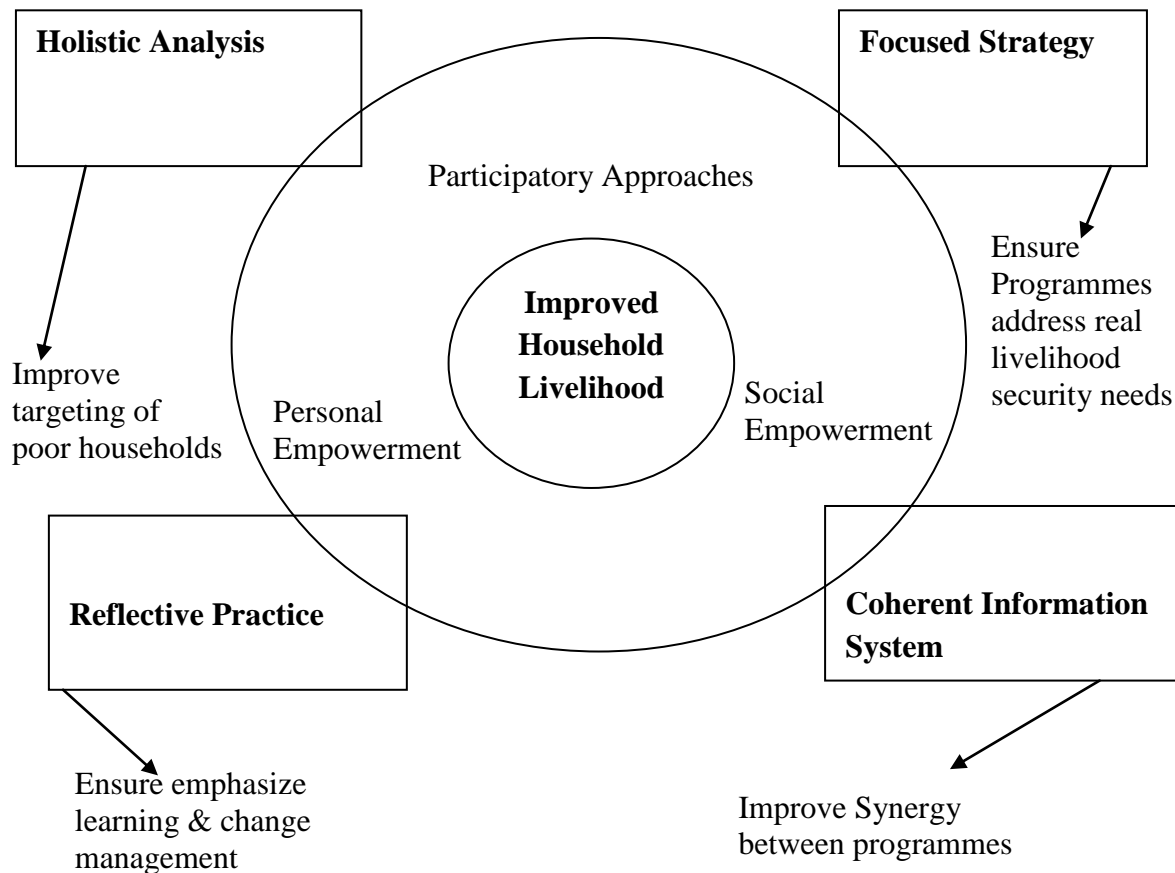
Figure 1.1 CARE's Livelihood Model

Figure 1.1 centres on a household's livelihood strategy. To evaluate changes taking place in the livelihood security status of households require a monitoring focus on the consumption status and asset levels of household members (Drinkwater and Rusinow 1999).



Source: Drinkwater and Rusinow (1999)

Figure 1.2 CARE Programming diagram on Household Livelihood Security (HLS)

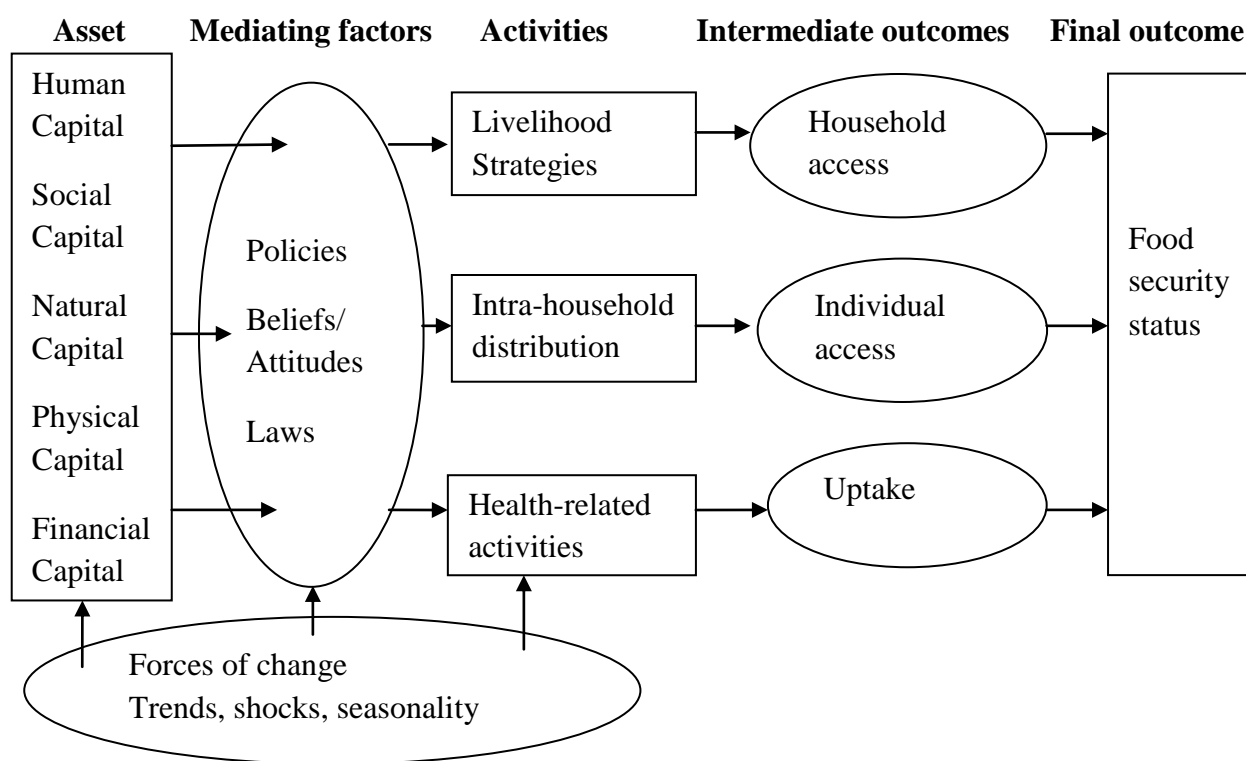


Source: Drinkwater and Rusinow (1999)

Household Livelihood Security (HLS) Approach can be described as: “.....adequate and sustainable access to income and other resources to enable households to meet basic needs and to build up assets to withstand and recover from shocks and stresses” (Drinkwater & Rusinow 1999). HLS refers to a dynamic and interactive programming process which includes the following steps according to Krantz (2001):

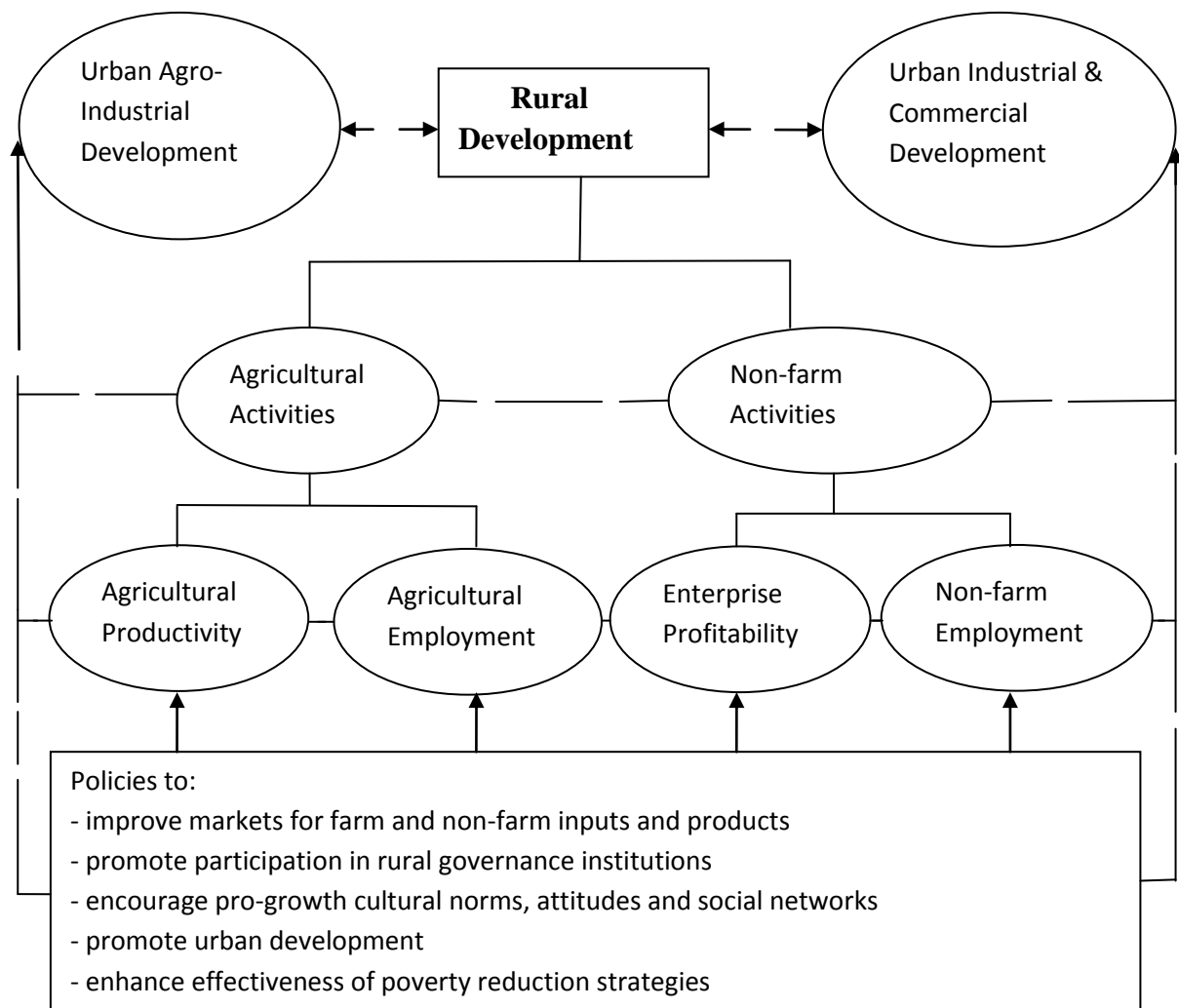
- Identify potential geographical areas using secondary data to find where poverty is concentrated;
- Identify vulnerable groups and the livelihoods constraints that they face;
- Collect analytical data (guided by CARE’s overall livelihood model), taking note of trends over time and identifying the indicators that will be monitored; and
- Select the set of communities for programme interventions.

Figure 1.3 Framework for gathering information about vulnerable group



Source: State of Food Insecurity in the World, FAO (2000).

Figure 1.4 Explaining Rural Development



Source: Mwabu and Thorbecke (2004)

APPENDIX 2: Community-based Information generated from Household Survey

Table 2.1 Community Level obstacles facing rural livelihoods

Obstacles	Yes		No	
	Frequency	Percent	Frequency	Percent
Is land ownership obstacle to farming?	186	77.5	54	22.5
Is cost of land obstacle to farming	211	87.9	29	12.1
Is cost of land obstacle to non-farm businesses?	87	36.3	153	63.8
Can land be used as collateral for bank loans?	58	24.2	181	75.4
Right to transfer land owned?	159	66.3	81	33.8

Source: Household survey

Table 2.2 How important is non-farm income to household survival

	Frequency	Percent
Less important	6	2.5
Slightly important	26	10.8
Important	59	24.6
Highly important	26	10.8
Most important income	123	51.3
Total	240	100.0

Source: Household Survey

Table 2.3 Role of non-farm jobs or businesses

	Frequency	Percent
As main source of household income	113	47.1
Source of extra household income	127	52.9
Total	240	100.0

Source: Household Survey

Table 2.4 Most Important source of household income by sector in 2009

	Frequency	Percent
Farm	116	48.3
Non-farm	124	51.7

Source: Household Survey

Table 2.5 Aim of farming

Aim	Frequency	Percent
To feed the household	98	40.8
As main source of income	58	24.2
Extra Income	59	24.6
To accumulate wealth	25	10.4
Total	240	100.0

Source: Household Survey

2.6 Other Livelihood findings

Heads of Household Livelihoods approaches	Yes (Percent)	No (Percent)
Did Household receive extension advice?	47.9	52.1
Did Household receive business advices?	15.0	85.0
Adoption of new technologies	53.3	46.7
Grown same crops and livestock since started farming	40.0	60.0
Used the same equipments or tools	84.6	15.4
Engaged in full-time non-farm employment	77.5	22.5
Own and operate non-farm enterprises	32.5	67.5
Have enough information on how to make loan applications	24.6	75.4
Own and operate bank account	32.1	67.9
Membership of social organizations	90.0	10.0
Own radio equipment	100.0	-
Own television equipment	25.8	74.2
Community access to telephone lines	-	100.0
Community access to mobile phones	100.0	-
Community access to internet services	5.0	95.0
Community access to hospital or health clinic	47.5	52.5
Community access to rural electricity	38.3	61.7
Community access to good roads	47.5	52.5
Community access to basic infrastructure (both roads and electricity)	40.8	59.2
Ownership of a car or vehicle	16.7	83.3
Ownership of motorcycle	52.1	47.9
Ownership of bicycle	80.4	19.6
Do households feel life is a struggle or living in poverty	50.4	49.6
Do households various income provide enough for household needs	11.7	88.3

Source: Household survey data

APPENDIX 3: Quantitative Data generated from Household survey

Table 3.1 Gender of heads of household

Gender	Frequency	Percent
Male	220	91.7
Female	20	8.3
Total	240	100.0

Source: Household survey data

Table 3.2 Completed years of formal Education (Heads of Household)

Years of Education	Frequency (n=240)	Percent
0	47	19.6
2	3	1.3
3	13	5.4
4	14	5.8
5	22	9.2
6	46	19.2
7	5	2.1
8	5	2.1
9	6	2.5
10	3	1.3
11	27	11.3
12	5	2.1
13	17	7.1
14	25	10.4
16	2	.8

Source: Household survey data

Table 3.3 Marital Status of Head of households

	Frequency (n=240)	Percent
Married	221	92.1
Divorced or separated	4	1.7
Windowed	15	6.3

Source: Household survey data

Table 3.4 Age group of Heads of Household

Age in years	Frequency	Percent
35 – 40	12	5.0
41 – 45	46	19.2
46 – 50	68	28.3
51 – 55	29	12.1
56 – 60	34	14.2
61 – 65	23	9.6
66 – 70	25	10.4
71 – 75	3	1.3
TOTAL	240	100

Source: Household survey data

Table 3.5 Household Size

Number	Frequency	Percent
1 – 5	10	4.2
6 – 10	136	56.7
11 – 15	64	26.7
16 – 20	25	10.4
21 – 25	5	2.1
Total	240	100

Source: Household survey data

Table 3.6 Education attainment of household members (Percent distribution)

Number	No Primary Education	With Primary Education	No Secondary Education	With Secondary Education	With Higher Education
None	34.6	12.1	13.8	20.8	61.3
1 – 2	53.5	34.6	56.3	54.2	38.3
3 – 5	12.9	47.9	28.8	24.6	.4
6 – 8	-	5.0	1.3	.4	-
9 – 10	-	.4	-	-	-
Total	100.0	100.0	100.0	100.0	100.0

Table 3.7 Number of household's migrated members by gender

Number of members	Male		Female	
	Frequency	Percent	Frequency	Percent
1	106	44.2	90	37.5
2	68	28.3	26	10.8
3	16	6.7	1	.4
4	1	.4	-	-
None	49	20.4	123	51.3
Total	240	100.0	240	100.0

Source: Household survey data

Table 3.8 Food and Non-food Expenditure

Amount (Naira)	Weekly Food Expenditure		Monthly Non-food Expenditure	
	Frequency	Percent	Frequency	Percent
0 – 2000	31	12.9	4	1.7
2001 – 4000	45	18.7	44	18.3
4001 – 8000	63	26.3	116	48.3
8001 – 10000	40	16.7	49	20.4
10001 – 15000	44	18.3	22	9.2
15001 – 20000	15	6.3	5	2.1
21000 – 25000	2	.8	-	-
TOTAL	240	100.0	240	100.0

Source: Household survey data

Table 3.9 Farm size (area of land cultivated in hectares)

Hectares	Frequency	Percent	Cumulative Percent
1.0	68	28.3	28.3
1.2	1	.4	28.8
1.3	1	.4	29.2
1.5	4	1.7	30.8
1.6	2	.8	31.7
1.7	3	1.3	32.9
1.8	1	.4	33.3
2.0	111	46.3	79.6
3.0	33	13.8	93.3
4.0	15	6.3	99.6
5.0	1	.4	100.0
Total	240	100.0	

Source: Household survey data

Table 3.10 Number of Persons Employed in households farming activities

Number	Frequency	Percent
1 – 5	11	4.6
6 – 10	77	32.0
11 – 15	75	31.3
16 – 20	44	18.3
21 – 25	23	9.6
26 – 30	10	4.0
TOTAL	240	100

Source: Household survey data

Table 3.11 Proportion of land cultivated that is owned (in Percent)

Percent	Frequency	Percent
40	11	4.6
45	17	7.1
50	75	31.3
60	3	1.3
65	8	3.3
70	29	12.1
75	25	10.4
80	22	9.2
85	11	4.6
90	4	1.7
100	35	14.6
Total	240	100.0

Source: Household survey data

Table 3.13 Distribution of Financial capital (savings) among households

Amount (000) Naira	Frequency	Percent
10 – 25	32	13.3
26 – 50	77	32.1
51 – 100	42	17.5
101 – 150	35	14.6
151 – 200	35	14.6
201 – 250	12	5.0
251 – 300	5	2.1
301 – 350	2	.8
TOTAL	240	100

Table 3.14 Household Farm and Non-farm annual Income (000) Naira

Amount (000)	Crop		Livestock		Farm		Non-farm		Household Income	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
1 – 25	30	12.5	105	43.8	16	6.7	52	21.7	2	0.8
26 – 50	79	32.9	79	32.9	42	17.5	35	14.6	12	5.0
51 – 100	69	28.8	47	19.6	77	32.1	75	31.3	45	18.8
101 – 150	34	14.2	9	3.8	47	19.6	39	16.3	36	15.0
151 – 200	15	6.3	-	-	32	13.3	16	6.7	56	23.3
201 – 250	6	2.5	-	-	11	4.6	8	3.3	19	7.9
251 – 300	5	2.0	-	-	10	4.2	12	5.0	28	11.7
301 – 350	2	0.8	-	-	2	0.8	2	0.8	7	2.9
351 – 400	-	-	-	-	2	0.8	1	0.4	15	6.3
401 – 450	-	-	-	-	-	-	-	-	5	2.0
451 – 450	-	-	-	-	1	0.4	-	-	3	1.3
501 – 550	-	-	-	-	-	-	-	-	6	2.4
551 – 600	-	-	-	-	-	-	-	-	3	1.3
601 – 650	-	-	-	-	-	-	-	-	2	0.8
651 – 700	-	-	-	-	-	-	-	-	1	0.4
TOTAL	240	100	240	100	240	100	240	100	240	100

Source: Household survey data

Table 3.15 Payment Received per Man-day for farm and non-farm work

Amount (Naira) US\$1=161 Naira	Farm Work		Non-farm Work	
	Frequency	Percent	Frequency	Percent
1000 or Less	22	9.2	5	2.1
1100 – 1499	88	36.7	24	10.0
1500 – 1999	66	27.5	87	36.3
2000 – 2499	39	16.3	55	22.9
2500 – 2999	20	8.3	31	12.9
3000 – 3499	5	2.1	25	10.4
3500 – 3999	-	-	7	2.9
4000 – 5000	-	-	6	2.5
TOTAL	240	100	240	100

Source: Household survey data

Table 3.16 When head of household migrate who takes charge of farm/non-farm

	Frequency	Percent
Wife of head of household	190	79.2
Most elder member of the Household	43	17.9
Other employed person	7	2.9
Total	240	100.0

Source: Household survey data

Table 3.17 Job/employment location 2005 and 2009

Location	2005		2009	
	Frequency	Percent	Frequency	Percent
This village	144	60.0	214	89.2
Nearby village	31	12.9	5	2.1
This local district	12	5.0	21	8.8
Urban or city	53	22.1	-	-
Total	240	100.0	240	100.0

Table 3.18 Household most important jobs sector 2005-2009

Sector	2005		2009	
	Frequency	Percent	Frequency	Percent
Agriculture or farming	120	50.0	62	25.8
Non-farm work or trading	17	7.1	28	11.7
Both farming and non-farm work or trading	28	11.7	66	27.5
Salaried job	30	12.5	42	17.5
Others jobs	45	18.7	42	17.5
Total	240	100.0	240	100.0

Source: Household survey data

Table 3.19 Amount of start-up capital for farming and non-farm businesses

Amount (000) naira	Farm		Non-farm	
	Frequency	Percent	Frequency	Percent
1 – 10	11	4.6	3	1.3
11 – 20	30	12.5	9	3.8
21 – 30	41	17.1	13	5.4
31 – 50	68	28.3	31	12.9
51 – 100	73	30.4	40	16.7
101 – 150	13	5.4	14	5.8
151 – 250	3	1.3	16	6.7
251 – 500	-	-	10	4.2
None	1	.4	104	43.3
Total	240	100.0	240	100.0

Source: Household survey data

Table 3.20 Purpose for Crops and Livestock farming

Purpose	Crops		Livestock	
	Frequency	Percent	Frequency	Percent
For sale only	17	7.1	61	25.4
Sale and consumption	125	52.1	70	29.2
For consumption only	98	40.8	109	45.4
Total	240	100.0	240	100.0

Source: Household survey data

Table 3.21 Percentage of crops/ livestock sold or consumed by households

Percent	Crops				Livestock			
	Sold		Consumed		Sold		Consumed	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
0 – 30	90	37.5	29	12.1	77	32.1	90	37.5
31 – 49	41	17.1	52	21.7	34	14.2	10	4.2
50 – 60	49	20.4	41	17.1	30	12.5	19	7.9
61 – 79	44	18.3	58	24.2	23	9.6	30	12.5
80 – 90	16	6.7	44	18.3	76	31.7	65	27.1
91 – 100	-	-	16	6.7	-	-	26	10.8
Total	240	100.0	240	100.0	240	100.0	240	100.0

Source: Household survey data

Table 3.22 How much planned to invest in farm/non-farm activities next 5 years plans?

Amount in naira	Farming		Non-farm Businesses	
	Frequency	Percent	Frequency	Percent
1000 – 20000	1	.4	2	.8
21000 – 100000	2	.8	17	7.1
101000 – 200000	72	30.0	62	25.8
201000 – 300000	68	28.3	66	27.5
301000 – 500000	56	23.3	44	18.3
501000 – 800000	27	11.3	28	11.7
801000 – 1500000	14	5.8	17	7.1
1500000 – 2000000	-	-	4	1.7
Total	240	100.0	240	100.0

Source: Household survey data

Table 3.23 Main Barriers/constraint to starting Non-farm businesses

Factors	Frequency	Percent
Lack of start-up capital	32	13.3
Lack of access to loan facilities	34	14.2
Lack of access to electricity supply	16	6.7
Poor quality of electricity/power failure	2	.8
Poor access to market	10	4.2
Poor access to market information	1	.4
Lack of good roads	1	.4
Low demand for goods and services	3	1.3
Unavailability/high cost of skilled labour	6	2.5
Ownership system/high cost of land	4	1.7
Government regulation on	1	.4
Uncertain economic environment	2	.8
Crime, theft and social disorder	1	.4
Total	113	47.1
Not applicable	127	52.9
Total	240	100.0

Source: Household survey data

Table 3.24 Sources of loan applications for financing businesses

Sources	Frequency	Percent
Micro-finance banks	2	.8
Agricultural or cooperative banks	34	14.2
Informal money lenders	61	25.4
Cooperatives society	5	2.1
Money contribution groups	22	9.2
Not applicable	116	48.3
Total	240	100.0

Source: Household survey data

Table 3.25 Main purpose of the loan

	Frequency	Percent
To purchase land	33	13.8
For production	27	11.3
Purchase raw materials	23	9.6
Purchase equipment or tools	39	16.3
Other needs	2	.8
Not applicable	116	48.3
Total	240	100.0

Source: Household survey data

Table 3.26 Most important benefit or assistance offered by social organisations

	Frequency	Percent
Money or loan	116	48.3
Free labour on farm and off-farm	84	35.0
Farm inputs or seed supply	8	3.3
Food support and home improvement	4	1.7
Marketing and information	14	5.8
Not applicable	14	5.8
Total	240	100.0

Source: Household survey data

Table 3.27 Most important sources of investment in the past 5 years

	Frequency	Percent
Sale of farm produce	29	12.1
Income from non-farm work/trade	53	22.1
Farm and nonfarm income	28	11.7
Income from salaried job	25	10.4
Sale of land, assets and properties	59	24.6
Remittances	46	19.2
Total	240	100.0

Source: Household survey data

Table 3.28 Most beneficial government assisted community project in past 10 years

	Frequency	Percent
Roads	41	17.1
Water	70	29.2
Electricity	40	16.7
Loans	6	2.5
Fertilizer and other farm inputs	5	2.1
Mobile phone services	60	25.0
Immunization and health care	10	4.2
Extension services	4	1.7
Public transport services	4	1.7
Total	240	100.0

Source: Household survey data

Table 3.29 Most important factor discouraging diversification into Non-farm

	Frequency	Percent
Farming brings sufficient income	14	5.8
Insufficient knowledge and skills	29	12.1
Lack or insufficient capital	46	19.2
Remoteness and lack of demand for Goods and services	45	18.8
Personal age	45	18.8
Too much risk involved in diversification	5	2.1
Farming takes most of the time	19	7.9
Lack of good supporting policies	23	9.6
Other reasons	1	.4
None	13	5.4
Total	240	100.0

Source: Household survey data

Table 3.30 Most important factor encouraging diversification into Non-farm

	Frequency	Percent
To generate more income	98	40.8
To diversify away from agriculture	48	20.0
Good policies, grants and scheme	4	1.7
conservation and environmental reasons	23	9.6
To employ family members	15	6.3
Identification of market opportunity	50	20.8
Other reasons	2	.8
Total	240	100.0

Source: Household survey data

Table 3.31 Household business plan for next 5 years

	Frequency	Percent
Expand farm businesses	51	21.3
Expand or increase non-farm	63	26.3
Expand both farm and non-farm	99	41.3
Decrease production	3	1.3
Learn new skill and seek regular employment	1	.4
Sell off businesses and migrate	18	7.5
None	5	2.1
Total	240	100.0

Source: Household survey data

Table 3.32 Main driving factor in favour of proposed next 5 years business plan

	Frequency	Percent
High income from farm work	39	16.3
High income from non-farm	134	55.8
Low farm income	21	8.8
Low nonfarm income	4	1.7
Availability and cost of land	15	6.3
Market	5	2.1
Availability or lack of loan	21	8.8
Infrastructures	1	.4
Total	240	100.0

Source: Household survey data

Table 3.33 Main driving factor against the proposed next 5 years business plan

	Frequency	Percent
High nonfarm income	1	.4
Low farm income	39	16.3
Low nonfarm income	1	.4
Availability and cost of land	42	17.5
Market	13	5.4
Loan	18	7.5
Infrastructures	73	30.4
Other reasons	38	15.8
None	15	6.3
Total	240	100.0

Source: Household survey data

Table 3.34 Prices changes of Basic items (2005 – 2009)

Items (Naira) Averages	2005	2009
Plot of land	76,395.00	150,000.00
Maize/Kg (farm gate)	22.00	33.00
Rice/Kg (farm gate)	60.00	72.00
Sweet Potatoes/Kg	28.00	36.00
Cassava/Kg	19.00	26.00
Groundnut/Kg	33.00	41.00
Chicken (live) mature	1,200.00	1800.00
Goat (live) mature	18,000.00	24,000.00
Cow (live) mature	50,000.00	70,000.00
Non-food Items		
Bicycle	20,717.39	31,201.09
Motorcycle (New)	67,952.00	94,704.00
Vehicle/cars (fairly used)	522,500.00	755,750.00

Source: Household survey data

APPENDIX 4 Statistical Results on Disaggregated data

Table 4.1 Determinants of income for Small-farm households

Variables	Coefficients	T- ratio	P(Z>=z)	95% (Coefficient interval)	
				Lower	Upper
Household labour force	20.434	1.190	0.06	-.900	41.768
Education Level of Head of Household	6.287	4.273	0.00***	3.354	9.221
Age of Head of Household	-.753	-1.352	0.18	-1.862	.357
Farm size	450.827	7.971	0.00***	338.055	563.599
Proportion of Farm size owned (%)	1.357	2.225	0.02***	.141	2.573
Level of Financial Capital	.188	1.000	0.32	-.187	.563
Ownership of Non-farm enterprises (dummy)	-194.666	-7.175	0.00***	-248.761	-140.571
Access to Basic infrastructure (dummy)	-24.941	-.819	0.41	-85.655	35.773

***=Variable significant at the 1% level * =Significance at 5%

Constant = -437.126

df = 8

Adj. R square = .853

F value = 58.130***

Std. Error = 33.475 Number of households=80

Table 4.2 Determinants of income for Large-farm households

Variables	Coefficients	T- ratio	P(Z>=z)	95% (Coefficient interval)	
				Lower	Upper
Household labour force	43.352	8.992	0.00***	33.826	52.878
Education Level of Head of Household	7.242	7.067	0.00***	5.217	9.267
Age of Head of Household	-1.452	-3.721	0.00***	-2.223	-.681
Farm size	34.262	5.171	0.00***	21.171	47.354
Proportion of Farm size owned (%)	.407	1.373	0.17	-.179	.993
Level of Financial Capital	.306	4.842	0.00	.181	.431
Ownership of Non-farm enterprises (dummy)	22.761	2.366	0.01***	3.754	41.768
Access to Basic infrastructure (dummy)	21.940	2.324	0.02**	3.290	40.590

***=Variable significant at the 1% level * =Significance at 5%

Constant = 11.352

df = 8

Adj. R square = .900

F value = 178.669***

Std. Error = 39.623 Number of households=160

Table 4.3 Determinants of income for Low Education households

Variables	Coefficients	T- ratio	P(Z>=z)	95% (Coefficient interval)	
				Lower	Upper
Household labour force	16.871	2.788	0.00***	4.903	28.839
Education Level of Head of Household	6.882	5.249	0.00***	4.289	9.475
Age of Head of Household	-.253	-.744	0.45	-.924	.419
Farm size	25.717	4.835	0.00***	15.198	36.235
Proportion of Farm size owned (%)	1.021	3.234	0.00***	.396	1.645
Level of Financial Capital	.171	2.492	0.01***	.035	.306
Ownership of Non-farm enterprises (dummy)	28.241	2.840	0.00***	8.574	47.908
Access to Basic infrastructure (dummy)	29.469	3.050	0.00***	10.361	48.577

***=Variable significant at the 1% level *=Significance at 5%

Constant= -17.915

df = 8

Adj. R square = .835

F value = 91.650***

Std. Error = 29.898

Number of households= 145

Table 4.4 Determinants of income for High Education households

Variables	Coefficients	T- ratio	P(Z>=z)	95% (Coefficient interval)	
				Lower	Upper
Household labour force	51.341	7.826	0.00***	38.297	64.386
Education Level of Head of Household	8.633	2.514	0.01***	1.806	15.459
Age of Head of Household	-2.432	-3.824	0.00***	-3.697	-1.169
Farm size	40.223	4.574	0.00***	22.739	57.708
Proportion of Farm size owned (%)	.084	.205	0.83	-.731	.900
Level of Financial Capital	.411	4.668	0.00***	.236	.586
Ownership of Non-farm enterprises (dummy)	14.827	1.077	0.28	-12.533	42.188
Access to Basic infrastructure (dummy)	6.509	.449	0.65	-22.300	35.319

***=Variable significant at the 1% level *=Significant at the 5%

Constant = 41.422

df = 8

Adj. R square = .892

F value = 97.239***

Std. Error = 43.449

Number of households= 95

Table 4.5 Determinants of income for Low Farm income households

Variables	Coefficients	T- ratio	P(Z>=z)	95% (Coefficient interval)	
				Lower	Upper
Household labour force	23.885	3.744	0.00***	11.262	36.509
Education Level of Head of Household	7.728	7.690	0.00***	5.739	9.717
Age of Head of Household	-.115	-.315	0.75	-.836	.607
Farm size	23.045	3.647	0.00***	10.539	35.550
Proportion of Farm size owned (%)	.986	2.723	0.00***	.269	1.703
Level of Financial Capital	.123	1.333	0.18	-.060	.306
Ownership of Non-farm enterprises (dummy)	12.595	1.044	0.29	-11.271	36.458
Access to Basic infrastructure (dummy)	21.606	1.863	0.06	-1.343	44.556

***=Variable significant at the 1% level *=Significant at the 5%

Constant = -30.297

df = 8 Adj. R square = .833

F value = 84.808*** Std. Error = 29.906

Number of households= 136

Table 4.6 Determinants of income for High Farm income households

Variables	Coefficients	T- ratio	P(Z>=z)	95% (Coefficient interval)	
				Lower	Upper
Household labour force	51.197	8.022	0.00***	38.526	63.867
Education Level of Head of Household	6.833	4.886	0.00***	4.057	9.609
Age of Head of Household	-2.448	-4.538	0.00***	-3.519	-1.377
Farm size	34.645	4.529	0.00***	19.458	49.833
Proportion of Farm size owned (%)	.273	.669	0.50	-.538	1.085
Level of Financial Capital	.330	3.839	0.00***	.159	.501
Ownership of Non-farm enterprises (dummy)	18.407	1.496	0.13	-6.018	42.833
Access to Basic infrastructure (dummy)	18.441	1.460	0.14	-6.631	43.513

***=Variable significant at the 1% level *=Significant at the 5%

Constant = 65.376

df = 8 Adj. R square = .881

F value = 95.919*** Std. Error = 44.166

Number of households= 104

Table 4.7 Determinants of income for Low Non-farm income households

Variables	Coefficients	T- ratio	P(Z>=z)	95% (Coefficient interval)	
				Lower	Upper
Household labour force	14.534	2.673	0.00***	3.790	25.277
Education Level of Head of Household	5.124	6.035	0.00***	3.446	6.801
Age of Head of Household	-.481	-1.567	0.11	-1.087	.125
Farm size	24.869	4.847	0.00***	14.732	35.005
Proportion of Farm size owned (%)	1.036	3.421	0.00***	.438	1.635
Level of Financial Capital	.186	2.718	0.00***	.051	.321
Ownership of Non-farm enterprises (dummy)	28.340	2.820	0.00***	8.485	48.195
Access to Basic infrastructure (dummy)	26.673	2.922	0.00***	8.637	44.710

***=Variable significant at the 1% level *=Significant at the 5%

Constant = 1.688

df = 8

Adj. R square = .823

F value = 94.261***

Std. Error = 30.309

Number of households= 136

Table 4.8 Determinants of income for High Non-farm income households

Variables	Coefficients	T- ratio	P(Z>=z)	95% (Coefficient interval)	
				Lower	Upper
Household labour force	52.884	7.351	0.00***	38.535	67.233
Education Level of Head of Household	5.955	2.755	0.00***	1.643	10.266
Age of Head of Household	-2.444	-3.534	0.00***	-3.823	-1.065
Farm size	46.448	5.228	0.00***	28.728	64.168
Proportion of Farm size owned (%)	.108	.264	0.79	-.708	.924
Level of Financial Capital	.416	4.820	0.00***	.244	.588
Ownership of Non-farm enterprises (dummy)	7.147	.526	0.60	-19.936	34.230
Access to Basic infrastructure (dummy)	5.163	.334	0.74	-25.712	36.037

***=Variable significant at the 1% level *=Significant at the 5%

Constant = 63.003

df = 8

Adj. R square = .891

F value = 81.064***

Std. Error = 41.510

Number of households= 79

Table 4.9 Determinants of income for Low Income households

Variables	Coefficients	T- ratio	P(Z>=z)	95% (Coefficient interval)	
				Lower	Upper
Household labour force	18.457	2.578	0.01***	4.275	32.640
Education Level of Head of Household	6.694	6.794	0.00***	4.743	8.646
Age of Head of Household	-.468	-1.239	0.21	-1.216	.280
Farm size	22.841	3.664	0.00***	10.491	35.191
Proportion of Farm size owned (%)	.370	.890	0.37	-.453	1.192
Level of Financial Capital	.214	2.070	0.04*	.009	.419
Ownership of Non-farm enterprises (dummy)	20.935	1.080	0.28	-17.456	59.326
Access to Basic infrastructure (dummy)	42.701	1.750	0.08	-5.632	91.035

***=Variable significant at the 1% level *=Significant at the 5%

Constant = 25.160

df = 8

Adj. R square = .557

F value = 20.338***

Std. Error = 30.562

Number of households= 124

Table 4.10 Determinants of income for Higher Income households

Variables	Coefficients	T- ratio	P(Z>=z)	95% (Coefficient interval)	
				Lower	Upper
Household labour force	47.708	7.925	0.00***	35.773	59.644
Education Level of Head of Household	7.735	5.415	0.00***	4.903	10.568
Age of Head of Household	-1.722	-3.181	0.00***	-2.795	-6.49
Farm size	38.166	5.004	0.00***	23.043	53.289
Proportion of Farm size owned (%)	.347	.870	0.38	-.444	1.137
Level of Financial Capital	.342	4.544	0.00***	.193	.491
Ownership of Non-farm enterprises (dummy)	17.690	1.624	0.10	-3.911	39.292
Access to Basic infrastructure (dummy)	15.194	1.272	0.20	-8.494	38.882

***=Variable significant at the 1% level *=Significant at the 5%

Constant = 8.560

df = 8

Adj. R square = .856

F value = 85.757***

Std. Error = 43.495

Number of households = 116

Table 4.11 Mean values for all disaggregated data and all households in study area.

Groups	Number of adult household members working	Years of education of heads of households	Farm size (Ha)	Proportion of farm size that is owned (%)	Farm capital (000)	Crop Income (000)	Livestock Income (000)	Farm income (000)	Non-farm income (000)	Household income (000)
Small Farms	1.38	5.0	1.08	53.25	40.13	30.59	17.58	51.74	72.60	126.06
Large Farms	2.17	7.8	2.41	74.09	122.62	109.28	48.56	149.9	104.8	256.80
Low Educ.	1.46	3.7	1.74	58.66	72.12	64.06	29.55	90.30	54.3	147.80
High Educ.	2.60	11.8	2.31	80.21	130.22	112.36	51.84	158.8	155.4	314.35
Low Farm Income	1.45	5.16	1.47	56.32	49.63	42.36	21.43	62.93	75.62	142.02
High Farm Income	2.48	9.08	2.61	81.11	155.62	135.77	60.65	188.1	116.9	304.93
Low non-farm income	1.43	4.56	1.77	59.26	78.00	66.40	34.32	97.13	51.08	151.09
High non-farm income	2.91	11.7	2.38	83.73	130.80	118.41	47.30	160.6	182.3	342.99
Low Total annual income	1.27	4.28	1.45	51.77	51.32	43.45	25.08	68.68	50.54	117.56
High Total annual income	2.59	9.67	2.52	83.58	141.94	125.37	52.31	169.0	140.6	315.48
Sample annual income	1.90	6.89	1.96	67.15	95.12	83.05	38.24	117.2	94.07	215.36

Source: Household Field survey data

Table 4.12 Values of variables used analysing determinants of household income

Variables	Mean Results (000)	Household income	Crop Income	Farm Income	Non-farm Income
Age in Years					
30 – 50 (n=127)	Mean	200.66	65.90	91.52	106.83
	Sum	25484	8369	11623	13567
	Std. Deviation	129.935	55.040	62.996	83.098
	Variance	16883.067	3029.426	3968.506	6905.303
51 – 72 (n=113)	Mean	227.34	102.32	146.00	79.73
	Sum	25689	11562	16498	9009
	Std. Deviation	133.846	74.309	87.804	69.798
	Variance	17914.618	5521.790	7709.464	4871.737
Education in Years					
0 – 4 (n=76)	Mean	119.99	56.28	82.62	37.03
	Sum	9119	4277	6279	2814
	Std. Deviation	67.945	48.012	56.064	29.135
	Variance	4616.493	2305.109	3143.146	848.853
5 – 7 (n=73)	Mean	178.84	72.84	99.93	72.93
	Sum	13055	5317	7295	5324
	Std. Deviation	83.018	59.280	64.484	36.747
	Variance	6892.028	3514.139	4158.204	1350.342
8 – 12 (n=45)	Mean	231.88	82.98	127.27	104.38
	Sum	10403	3734	5727	4697
	Std. Deviation	73.782	48.924	65.548	53.521
	Variance	5443.786	2393.568	4296.564	2864.513
14 – 16 (n=44)	Mean	400.82	144.39	194.32	205.55
	Sum	17636	6353	8550	9044
	Std. Deviation	117.689	85.867	99.559	71.635
	Variance	13850.710	7373.219	9912.082	5131.556
Household labour force					
1 adult only (n=103)	Mean	127.49	47.85	73.99	49.39
	Sum	13131	4929	7621	5087
	Std. Deviation	75.673	37.866	50.945	35.529
2 or more adult (n=137)	Mean	277.68	109.50	149.64	127.66
	Sum	38042	15002	20500	17489
	Std. Deviation	129.076	72.241	83.128	84.483
Farm size (Hectare)					
Less than 2.0 (n=80)	Mean	126.06	30.59	51.74	72.60
	Sum	10085	2447	4139	5808
	Std. Deviation	87.197	14.803	33.039	61.597
	Variance	7603.300	219.131	1091.588	3794.218
2.0 – 5.0 (n=160)	Mean	256.80	109.28	144.89	104.80
	Sum	41088	17484	23982	16768
	Std. Deviation	129.440	67.848	76.928	83.349
	Variance	16754.727	4603.333	5917.950	6947.042

Source: Household survey data

Table 4.12 Values of variables used in analysing determinants of household income cont'd.

Variables	Mean Results (000)	Household income	Crop Income	Farm Income	Non-farm Income
% of farm land owned					
40 – 70% (n=143)	Mean	138.26	50.78	77.99	61.41
	Sum	19771	7262	11152	8782
	Std. Deviation	75.669	36.313	48.369	49.680
	Variance	5725.785	1318.608	2339.549	2468.089
75 – 100% (n=97)	Mean	323.73	130.61	174.94	142.21
	Sum	21402	12669	16969	13794
	Std. Deviation	119.678	73.877	83.260	87.314
	Variance	14322.865	5457.782	6932.204	7623.790
Amount of savings (000)					
1 – 50 (n=109)	Mean	128.64	38.30	61.09	70.22
	Sum	14022	4175	6659	7654
	Std. Deviation	74.289	22.442	34.949	61.409
	Variance	5518.862	503.639	1221.417	3771.007
51 – 150 (n=74)	Mean	227.42	78.80	120.30	99.96
	Sum	16829	5831	8902	7397
	Std. Deviation	84.117	30.589	42.357	64.678
	Variance	7075.699	935.671	1794.157	4183.190
151 – 350 (n=57)	Mean	356.53	174.12	220.35	132.02
	Sum	20322	9925	12560	7525
	Std. Deviation	140.055	68.713	76.502	103.538
	Variance	19615.289	4721.538	5852.553	10720.196
Ownership of Non-farm					
No (n=162)	Mean	147.56	59.64	89.15	56.60
	Sum	23904	9662	14442	9170
	Std. Deviation	78.095	46.516	59.183	40.760
	Variance	6098.820	2163.784	3502.661	1661.346
Yes (78)	Mean	349.60	131.65	175.37	171.87
	Sum	277269	10269	13679	13406
	Std. Deviation	116.497	77.129	87.209	79.985
	Variance	13571.567	5948.957	7605.405	6397.568
Access to infrastructure					
No (n=142)	Mean	130.53	49.23	75.57	56.51
	Sum	18535	6991	10731	8024
	Std. Deviation	56.602	30.854	43.099	40.600
	Variance	3203.825	951.953	1857.509	1648.379
Yes (n=98)	Mean	333.04	132.04	117.45	148.49
	Sum	32638	12940	17390	14552
	Std. Deviation	117.821	75.138	83.558	87.143
	Variance	13881.813	5645.730	6981.858	7593.943
All Household (n=240)	Mean	215.36	83.05	121.29	94.07
	Sum	51173	19931	28121	22576
	Std. Deviation	132.189	67.206	80.297	78.149

Source: Computed from Household survey data

APPENDIX 5 SECONDARY DATA

Table 5.1 Percentage Distribution of Household Livelihood Based on Income (Nigeria)

	Very poor	Poor	Moderate	Fairly rich	Rich
NATIONAL	9.5	37.2	47.2	5.2	0.9
URBAN	6.1	30.1	56.2	6.3	1.2
RURAL	11.6	41.9	41.2	4.5	0.8
STATES					
ABIA	15.8	47.2	30.3	4.9	1.8
ADAMAWA	10.2	46.6	39.2	3.5	0.6
AKWA IBOM	14.0	36.4	43.3	4.5	1.8
ANAMBRA	10.1	37.5	45.0	5.1	2.2
BAUCHI	7.1	42.3	41.9	8.1	0.6
BAYELSA	32.6	35.0	28.6	1.7	2.1
BENUE	12.6	50.4	32.7	3.8	0.5
BORNO	3.9	41.7	51.3	2.4	0.7
CROSS RIVER	17.0	52.7	26.0	3.7	0.7
DELTA	13.6	43.5	36.2	6.0	0.7
EBONYI	27.6	51.4	15.2	5.2	0.5
EDO	3.9	29.8	59.1	6.1	1.1
EKITI	8.0	37.6	51.1	2.7	0.6
ENUGU	13.2	36.2	42.2	7.7	0.8
FCT ABUJA	3.3	39.0	55.6	1.3	0.8
GOMBE	7.5	42.6	46.3	2.9	0.8
IMO	20.3	46.7	30.4	1.8	0.8
JIGAWA	4.9	30.7	56.0	7.3	1.0
KADUNA	8.8	43.5	38.2	9.0	0.5
KANO	11.5	41.9	40.8	5.2	0.6
KATSINA	7.9	40.8	46.2	4.5	0.7
KEBBI	6.6	39.6	46.3	5.3	2.2
KOGI	5.8	32.2	58.7	2.9	0.4
KWARA	3.8	36.6	57.0	2.4	0.2
LAGOS	4.3	20.5	66.2	8.3	0.7
NASSARAWA	7.0	26.9	60.0	5.9	0.2
NIGER	6.9	25.1	59.6	7.7	0.7
OGUN	2.7	21.8	69.2	5.2	1.0
ONDO	5.9	46.4	44.2	3.4	0.0
OSUN	1.9	23.6	65.3	7.0	2.3
OYO	7.6	38.3	49.5	3.9	0.6
PLATEAU	7.6	31.1	55.9	4.0	1.4
RIVERS	12.0	45.9	33.9	6.2	1.9
SOKOTO	8.6	23.3	59.4	7.5	1.1
TARABA	10.1	54.3	29.8	5.4	0.4
YOBE	11.0	35.4	49.7	3.3	0.5
ZAMFARA	15.3	37.2	43.6	2.8	1.0

Source: NBS 2009/2010 Nigeria Living Standard Survey (NLSS)

5.2 Nigeria World Bank Indicators Report

Data Profile	2000	2005	2008	2009	2010
Population (Total millions)	123.69	139.82	150.67	154.49	158.42
Population Growth (annual %)	2.4	2.5	2.5	2.5	2.5
Surface area (sq.km) (thousands)	923.8	923.8	923.8	923.8	923.8
GNI, Atlas method (current US\$) (billions)	33.45	87.69	177.03	183.88	186.41
GNI per capital, Atlas method (current US\$)	270	630	1170	1190	1180
GNI,PPP (current international \$) (billion)	141.02	215.51	299.28	326.04	344.24
GNI per capital, ppp (current international \$)	1,140	1,540	1,990	2,110	2,170
Income share held by lowest 20%	-	-	-	-	4.4
Life expectancy at birth, total (years)	46	49	50	51	50.9
Fertility rate, total (births per woman)	5.9	5.7	5.6	5.6	-
Fertility rate (births per 1,000 woman ages 15-19 years)	130	122	117	116	-
Contraceptive prevalence (% of woman ages 15 – 49)	-	-	15	-	-
Births attended by skilled health staff (% of total)	-	-	15	-	-
Mortality rate, under-5 (per 1,000)	186	164	151	147	143
Malnutrition prevalence, weight for age (% of children under 5)	-	-	27	-	-
Immunization, measles (% of children ages 12-23 months)	33	41	53	64	71
Primary completion rate, total (% of relevant age group)	-	83	70	71	74
Ratio of girls to boys in primary and secondary education (%)	82	85	88	89	90
Prevalence of HIV, total (% of population ages 15-49) Environment	3.9	3.7	3.6	3.6	-
Forest area (sq.km) (thousands)	131.4	110.9	-	-	90.4
Agricultural land (% of land area)	78.9	84.0	85.1	81.8	-
Annual freshwater withdrawals, total (% of internal resources)	4.7	-	-	3.6	-
Improved water source (% of population with access)	53	57	58	-	-
Improved sanitation facilities (% of population with access)	34	32	32	-	-
Energy use (kg of oil equivalent per capital)	726	745	736	701	-
CO2 emission (metric tons per capital)	0.6	0.7	0.6	-	-
Electric power consumption (kWh per capital) Economy	74	128	127	121	-
GDP (Current US\$) (Billions)	45.98	112.25	207.12	168.57	193.67
GDP growth (annual %)	5.4	5.4	6.0	7.0	7.9

Inflation, GDP deflator (annual %)	38.2	19.8	11.0	-4.5	7.5
Agriculture, value added (% of GDP)	-	33	-	-	-
Agriculture, value added (% of GDP)	-	33	-	-	-
Industry, value added (% of GDP)	-	44	-	-	-
Services, etc., value added (% of GDP)	-	24	-	-	-
Exports of goods and services (% of GDP)	54	47	42	37	39
Imports of goods and services (% of GDP)	32	31	29	28	27
Gross capital formation (% of GDP)	-	-	-	-	-
Revenue, excluding grants (% of GDP)	-	9.4	9.7	-	-
Cash surplus/deficit (% of GDP)	-	2.5	-1.7	-	-
States and markets					
Time required to start a business (days)	-	43	31	31	31
Market capitalization of listed companies (% of GDP)	9.2	17.2	24.0	19.8	26.3
Military expenditure (% of GDP)	0.8	0.6	0.8	0.9	1.0
Mobile cellular subscription (per 100 people)	0	13	42	48	55
Internet user (per 100 people)	0.1	3.5	15.9	28.4	28.4
Roads, paved (% of total roads)	-	-	-	-	-
High- technology exports (% of manufactured exports)	1	-	0	3	1
Global links					
Merchandise trade (% of GDP)	64.6	63.4	64.7	52.7	65.2
Net barter terms of trade index (2000=100)	100	157	217	155	187
External debt stocks, total (DOD, current US\$) (million)	31,355	22,060	11,334	7,713	7,883
Total debt services (% of export of goods, services and income)	8.7	15.5	0.6	0.8	0.4
Net migration (thousands)	-95	-170	-	-	-300
Workers' remittance and compensation of employees, received (Current US\$ (millions))	1392	3329	9980	9585	10045
Foreign direct investment, net inflows (BoP, current US\$) (millions)	1140	4983	8197	8555	6049
Net official development assistance and official aid received (Current US\$) (millions)	174	6409	1290	1659	-

Source: World Development Indicators database (2010)

5.3 Nigeria Millennium Development Goals achievement (1990 – 2009)

Millennium Development Goals for Nigeria	1990	1995	2008	2009
Goal 1: Eradicate extreme poverty and hunger				
Employment to population ratio, 15+, total (%)	53	52	52	52
Employment to population ratio, ages 15-24, total (%)	29	29	28	24
Income share held by lowest 20%	-	5.0	-	-
Malnutrition prevalence, weight for age (% of children under 5)	35.1	-	-	-
Poverty gap at \$ 1.25 a day (PPP) (%)	-	32	-	-
Poverty headcount ratio at \$1.25 a day (PPP) (% of population)	-	69	-	-
Prevalence of undernourishment (% of population)	166	10	9	6
Vulnerable employment, total (% of total employment)	-	-	-	-
Goal 2: Achieve universal primary education				
Literacy rate, youth female (% of females ages 15-24)	-	-	-	65
Literacy rate, youth male (% of males ages 15-24)	-	-	-	78
Persistence to last grade of primary, total (% of cohort)	-	-	73	-
Primary completion rate, total (% of relevant age group)	-	-	-	-
Total enrolment, primary (% net)	-	-	64	63
Goal 3: Promote gender equality and empower woman				
Proportion of seats held by woman in national parliaments (%)	-	-	3	7
Ratio of female to male primary enrolment (%)	77	82	80	88
Ratio of female to male secondary enrolment (%)	76	-	82	77
Ratio of female to male tertiary enrolment (%)	-	-	77	-
Share of woman employed in the non-agricultural sector	-	-	18.6	-
Goal 4: Reduce child mortality				
Immunization, measles (% of children ages 12-23 months)	54	44	33	41
Mortality rate, infant (per 1,000 live births)	126	125	114	86
Mortality rate, under-5(per 1,000)	212	211	190	138
Goal 5: Improve maternal health				
Adolescent fertility rate (births per 1,000 woman ages 15-19)	-	-	135	124
Birth attended by skilled health staff (% of total)	33	-	42	39
Contraceptive prevalence (% of woman ages 15-49)	6	-	15	15
Maternal mortality ratio (estimate, per 100,000 live births)	-	1100	980	840
Pregnant women receiving prenatal care (%)	57	-	64	58
Unmet need for contraception (% of woman ages 15-49)	21	-	17	-
Goal 6: Combat HIV/AIDS, malaria, and other diseases				
Children under 5 with fever receiving anti-malarial drugs (%)	-	-	-	33
Condom use, ages 15-24, female (% of females ages 15-	-	-	7	36

24)				
Condom use, population ages 15-24,male (% of males)	-	-	32	50
Incidence of tuberculosis (per 100,000 people)	130	190	270	300
Prevalence of HIV, female (% ages 15-24)	-	-	-	2.3
Prevalence of HIV, male (% ages 15-24)	-	-	-	1
Prevalence of HIV, Total (% population ages 15-49)	0.7	2.2	3.1	3.1
Tuberculosis case detection rate (all forms)	16	6	8	19
Goal 7: Ensure environmental sustainability				
CO2 emissions (kg per PPP \$ of GDP)	0.5	0.3	0.5	0.3
CO2 emissions (metric tons per capital)	0.5	0.3	0.6	0.6
Forest area (% of land area)	19	17	14	11
Improved sanitation facilities (% of population with access)	37	36	34	32
Improved water source (% of population with access)	47	50	53	58
Marine protected areas (% of total surface area)	-	-	-	-
Terrestrial protected areas (% of total surface area)	-	-	-	16.0
Goal 8 : Develop a global partnership for development				
Debt service (PPG and IMF only, % of exports)	22	14	8	1
Internet users (per 100 people)	0.0	0.0	0.1	15.9
Mobile cellular subscriptions (per 100 people)	0	0	0	42
Net ODA received per capital (current US\$)	3	2	1	9
Telephone lines (per 100 people)	0	0	0	1
Others				
Fertility rate, total (birth per woman)	6.6	6.2	5.9	5.7
GNI per capital, Atlas method (current US\$)	260	210	270	1190
GNI, Atlas method (current US\$) (billions)	25.5	23.6	33.5	184.7
Gross capital formation (% of GDP)	-	-	-	-
Life expectancy at birth, total (years)	45	45	46	48
Literacy rate, adult total (% of people ages 15 and above)	55	-	-	60
Population, total (millions)	97.3	110.4	124.8	154.7
Trade (% of GDP)	72.2	86.5	86.0	63.0

Source: World Development Indicators database (WDR 2010)

Table 5.4 Gross Domestic Product at 1990 Current Basic Prices (Naira Billion)

Activity Sector	2003	2004	2005	2006	2007
1. Agriculture	3231.44	3903.76	4773.20	5940.24	7574.43
(a) Crop production	2880.54	3478.10	4228.28	5291.62	6752.87
(b) Livestock	202.26	243.89	313.25	378.70	480.58
(c) Forestry	40.42	51.66	61.79	73.46	92.45
(d) Fishing	108.22	130.12	169.98	196.45	248.54
2. Industry	4589.70	4610.08	6094.89	7488.74	7757.58
(a) Crude Petroleum	4113.91	4247.72	5664.88	6982.94	7101.23
(b) Mining & Quarrying	9.98	13.05	17.30	27.28	37.20
(c) Manufacturing	465.81	349.32	412.71	478.52	619.16
3. Building & Construction	118.56	166.08	215.79	250.33	349.70
4. Wholesale & Retail Trade	1094.64	1484.42	1868.25	2741.79	3906.58
5. Services	879.18	1246.72	1620.11	2143.49	3260.51
(a) Transport	229.71	365.73	386.48	441.82	728.57
(b) Communication	18.19	23.02	41.26	167.68	374.63
(c) Utilities	23.59	26.83	29.38	42.61	50.81
(d) Hotel & Restaurant	26.83	35.25	46.08	57.51	80.45
(e) Finance & Insurance	81.08	102.95	130.75	296.70	384.97
(f) Real Estate & Business services	505.14	463.24	712.84	808.56	1234.22
(g) Producers of Govt. Services	115.94	129.87	148.06	168.80	204.54
(i) Comm. Social & Piers Services	78.69	99.83	126.27	159.70	202.34
TOTAL (GDP)	8913.52	11441.1	14572.2	18564.6	22848.90
NON-OIL (GDP)	5799.61	7163.38	8907.36	11581.7	15747.67
TOTAL GDP GROWTH RATE (%)	27.17	15.11	27.70	27.40	23.08
OIL GDP GROWTH RATE (%)	52.60	3.25	33.36	23.27	1.69
NON-OILGDP GROWTH RATE (%)	12.72	23.51	24.35	30.02	35.97

Source: National Bureau of Statistics 2007

Table 5.5 Sector Contribution to Growth Rates of GDP (1990 Constant Basic Prices %)

Activity Sector	2003	2004	2005	2006	2007
1. Agriculture	2.58	2.65	2.85	2.93	2.65
Crop Production	2.42	2.36	2.56	2.64	2.67
2. Industry	6.12	1.22	0.47	-0.62	-0.78
Crude Petroleum	6.02	0.84	0.12	-0.93	-1.08
3. Building & Construction	0.12	0.14	0.18	0.20	0.21
4. Wholesales & Retail Trade	0.69	1.24	1.82	2.16	2.34
5. Services	0.06	1.32	1.19	1.36	1.49
Communications	0.36	0.35	0.43	0.59	0.74
TOTAL (GDP)	9.57	6.58	6.51	6.03	6.22
NON-OIL (GDP)	3.44	5.36	6.04	6.65	6.69

Source: National Bureau of Statistics 2007

Table 5.6 Sectoral Growth Rates of GDP at 1990 Constant Basic Prices (Percent)

Activity Sector	2003	2004	2005	2006	2007
1. Agriculture	6.64	6.50	7.06	7.40	7.42
Crop Production	7.00	6.50	7.13	7.49	7.51
Livestock	4.19	6.50	6.75	6.90	6.91
Forestry	1.50	6.50	5.92	6.02	6.02
Fishing	4.06	6.50	6.02	6.55	6.58
2. Industry	21.26	4.15	1.71	-2.51	-3.48
Crude Petroleum	23.90	3.30	0.50	-4.51	-5.92
Mining & Quarrying	5.44	10.85	9.53	10.28	10.32
Manufacturing	5.66	10.00	9.61	9.39	9.16
3. Building & Construction	8.75	10.00	12.10	12.99	13.02
4. Wholesale & Retail Trade	5.76	9.70	13.51	15.26	15.28
5. Services	0.41	8.83	7.96	9.18	9.77
Transport	1.20	5.90	6.35	6.92	6.93
Communications	35.87	27.77	28.38	32.45	32.84
Utilities	3.57	10.85	6.64	4.87	4.48
Hotel & Restaurant	4.64	10.85	10.45	12.91	12.98
Finance & Insurance	-9.56	2.73	2.85	4.98	5.01
Real Estate & Business Services	3.11	10.85	10.62	11.29	11.33
Producers of Govt. Services	1.24	10.85	5.38	5.85	5.92
Comm. Social & Pers. Services	1.30	10.85	10.50	10.61	10.66
TOTAL (GDP)	9.57	6.58	6.51	6.03	6.22
NON-OIL (GDP)	5.17	7.76	8.59	9.41	9.61

Source: National Bureau of Statistics 2007

Table 5.7 (a) Unemployment Rates by Age Group and sector (2003-2007)

Year	15-24 years			25-44 years			45-59 years		
	National	Urban	Rural	National	Urban	Rural	National	Urban	Rural
2003	32.1	33.8	31.3	14.7	18.1	13.2	10.7	11.6	10.3
2004	28.9	31.2	27.9	11.4	10.0	12.0	7.7	4.5	9.0
2005	34.2	34.6	34.0	11.3	9.3	12.2	6.6	4.1	7.7
2006	30.8	31.9	30.3	8.8	5.1	11.1	4.8	1.6	6.7
2007	30.7	31.9	30.2	8.5	4.7	11.0	4.5	1.0	6.6

Source: National Bureau of statistic- General Households Survey Report (2007)

Table 5.7 (b) Unemployment Rates by Age Group and sector, 2003 – 2007

Year	60-64 years			65-70 years			All Groups		
	National	Urban	Rural	National	Urban	Rural	National	Urban	Rural
2003	13.4	13.5	13.4	13.1	11.1	14.0	14.8	10.9	16.4
2004	10.1	4.8	12.4	8.7	5.1	10.2	13.4	9.5	15.0
2005	9.7	11.2	9.0	10.7	9.2	11.3	11.9	10.1	12.6
2006	7.3	4.0	8.3	7.1	4.2	12.5	13.7	10.2	14.6
2007	7.1	3.3	8.3	6.8	3.7	12.6	14.6	10.9	14.8

Source: National Bureau of statistics- General survey Report (2007)

Table 5.8 Percentage Distribution of Household Enterprises by kind of activity

	2001	2002	2003	2004	2005
Percentage of Households with					
No enterprise	24.39	24.86	24.15	23.62	23.00
1 Enterprise	56.63	56.07	56.91	57.90	58.82
2 Enterprises	15.54	15.62	15.50	15.49	15.43
3 and above Enterprises	3.64	3.70	3.61	3.10	2.81
Percentage of Enterprises by Activities					
Manufacturing	1.59	1.54	1.61	1.54	1.54
Wholesale	33.47	34.61	32.91	33.35	32.72
Hotels/Restaurant	0.51	0.60	0.47	0.30	0.15
Construction	0.28	0.20	0.32	0.62	0.83
Food and preparation	0.49	0.35	0.56	0.33	0.32
Crop Farming	42.95	47.49	40.68	31.40	23.36
Livestock Farming	0.28	0.14	0.35	0.17	0.19
Fishing	0.98	0.94	1.00	0.99	1.01
Services	8.64	8.81	8.56	7.79	7.27
Average Persons Per Enterprise	2.23	2.23	2.22	2.26	2.28

Source: NBS Nigeria Statistical Fact Sheet, 2007

Table 5.9 Spread and Trend in Poverty levels (1980 – 2004)

Levels	1980	1985	1992	1996	2004
NATIONAL	27.2	46.3	42.7	65.6	54.4
Urban	17.2	37.8	37.5	58.2	43.2
Rural	28.3	51.4	46.0	69.3	63.3
ZONE					
South-South	13.2	45.7	40.8	58.2	35.1
South East	12.9	30.4	41.0	53.5	26.7
South West	13.4	38.6	43.1	60.9	43.0
North Central	32.2	50.8	46.0	64.7	67.0
North East	35.6	54.9	54.0	70.1	72.2
North West	37.7	52.1	36.5	77.2	71.2
Size Of Household					
0-1	0.2	9.7	2.9	13.1	12.6
2-4	8.8	19.3	19.5	51.5	39.3
5-9	30.0	50.5	45.4	74.8	57.9
10-20	51.0	71.3	66.1	88.5	73.3
20+	80.9	74.9	93.3	93.6	90.7
Educational Level of Household head					
No Education	30.2	51.3	46.4	72.6	68.7
Primary	21.3	40.6	43.3	54.4	48.7
Secondary	7.6	27.2	30.3	52.0	44.3
Higher than Secondary	24.3	24.2	25.8	49.2	26.3

Source: National Bureau of Statistics (2006)

Table 5.10 Percentage Annual Inflation Rate (Year-on-Year)

	2003	2004	2005	2006	2007
January	10.6	22.4	9.8	10.7	8.0
February	7.3	24.8	10.9	10.8	7.1
March	5.9	22.5	16.3	12.0	5.2
April	8.3	17.5	17.9	12.6	4.2
May	8.7	19.8	16.8	10.5	4.6
June	14.0	14.1	18.6	8.5	6.4
July	12.9	10.7	26.2	3.0	4.8
August	12.4	13.0	28.2	3.7	4.2
September	18.4	9.1	24.3	6.3	4.1
October	23.6	10.7	18.6	6.1	4.6
November	21.3	10.0	15.1	7.8	5.2
December	23.8	10.0	11.6	8.5	6.6
Average	13.9	15.4	17.9	8.4	5.4

Source: CBN, Annual Report (2007)

TABLE 5.11 Percentage Distributions of households monthly Income in 2007

State	Naira						
	1,000	1999-4999	5000-9999	10000-19999	20000-49999	50000-80000	Above 80000
Abia	1.2	9.1	33.8	38.3	15.1	1.9	0.5
Adamawa	2.9	13.3	22.1	33.7	26.3	1.2	0.5
Akwa Ibom	0.2	6.3	21.9	38.3	30.7	1.8	0.6
Anambra	1.5	3.1	18.6	40.9	32.7	2.4	0.9
Bauchi	14.2	25.6	23.5	30.8	4.9	0.5	0.4
Bayelsa	2.0	6.1	9.8	28.0	44.8	7.9	1.4
Benue	1.4	11.4	27.2	29.3	26.2	3.1	1.4
Borno	0.7	10.0	17.1	29.9	36.1	4.6	1.6
Cross River	1.7	10.3	28.8	32.9	23.0	2.5	0.7
Delta	0.5	3.8	13.6	36.9	38.3	6.6	0.3
Ebonyi	1.4	15.6	39.3	30.5	11.1	0.7	1.1
Edo	1.9	7.8	29.3	37.7	20.4	2.0	0.8
Ekiti	1.9	20.9	36.0	25.7	13.3	1.7	0.5
Enugu	5.9	20.3	18.5	28.7	23.6	1.2	1.8
Gombe	0.7	2.6	14.4	34.9	43.2	3.3	0.8
Imo	1.2	15.0	29.5	29.8	22.5	1.6	0.4
Jigawa	10.6	12.1	22.3	28.8	23.0	2.6	0.5
Kaduna	2.9	22.9	28.9	22.7	17.0	2.1	3.5
Kano	3.4	17.7	22.3	29.6	24.7	2.3	0.1
Katsina	4.8	13.6	24.6	24.0	10.3	4.7	18.0
Kebbi	5.4	40.6	17.2	12.2	21.2	2.4	1.0
Kogi	3.4	10.2	16.7	34.6	31.9	1.7	1.4
Kwara	1.2	14.2	26.1	38.0	18.9	1.3	0.3
Lagos	0.2	2.5	18.9	36.6	36.1	4.8	0.8
Nassarawa	1.8	8.2	17.0	32.7	37.1	2.5	0.7
Niger	2.2	23.1	18.2	35.0	19.6	1.1	0.9
Ogun	1.3	12.8	37.8	27.9	18.9	1.1	0.3
Ondo	1.4	12.4	28.0	30.0	24.1	3.2	0.9
Osun	1.0	10.7	31.7	37.5	16.9	1.8	0.4
Oyo	6.1	7.1	13.7	31.6	36.6	4.0	0.9
Plateau	3.7	25.7	25.7	25.1	15.9	2.6	1.3
River	0.0	2.8	15.4	32.6	37.9	7.7	3.7
Sokoto	14.1	27.9	7.2	23.2	21.7	4.3	1.7
Taraba	4.0	12.6	19.4	28.0	24.7	6.1	5.3
Yobe	4.9	24.3	23.3	30.6	15.6	0.9	0.3
Zamfara	6.5	29.6	20.5	20.3	20.5	2.0	0.4
FCT(Abuja)	4.0	4.8	9.5	26.2	39.1	12.0	4.4
SECTOR							
Urban	2.3	8.5	19.4	32.6	31.3	4.4	1.4
Rural	3.4	15.7	24.7	30.5	22.0	2.2	1.5
National	3.0	13.2	22.8	31.2	25.2	3.0	1.5

Source: National Bureau of Statistics (2008)

Table 5.12 Producer Prices (Farm Gate Prices), 2003-2006 (N=/Kg)

DESCRIPTION	YEARS			
	2003	2004	2005	2006
Maize	20.01	22.03	20.14	19.99
Millet	18.21	20.15	38.74	20.17
Sorghum	17.12	19.00	27.74	19.12
Rice(paddy)	23.16	27.50	57.37	25.62
Beans	21.52	23.55	44.81	22.04
Bananas	49.07	53.02	13.64	13.75
Plantain	58.93	61.58	35.02	35.50
Potatoes	52.06	48.21	27.00	27.89
Sweet Potatoes	30.52	29.11	27.00	26.15
Yams	18.55	21.59	30.0	20.80
Cassava	17.59	20.91	19.97	19.91
Coco yams	12.71	15.72	34.32	16.79
Dried Cowpeas	61.55	60.77	44.81	44.90
Groundnuts (Unshelled	46.5	47.5	31.2	24.01
Cotton Seeds	35.00	41.35	51.84	50.02
Beniseeds	75.1	78.6	80.70	85.00
Cocoa Beans	150.9	165.7	188.1	189.2
Coffee Beans	120.6	116.5	112.3	113.0
Natural Rubber	113.9	116.3	138.4	139
Cashew Nuts	41.0	40.3	41.5	40
Beef	350.0	415.5	450.2	450
Pork	201.0	230.1	235.2	236
Mutton	373.1	405.2	409.6	410
Goat	332.6	375.5	380.6	400
Chicken Frozen	315.5	450.6	456.7	490

Source: NBS, Agricultural Survey 2005 (CBN Report 2007)

Table 5.13 Nigeria Telecommunication Statistics

	1999	2002	2003	2004	2005	2006	2007
No. of Fixed phone Lines ('000)	450	702	850	1120	1223	1668	2449
No. of Mobile phone lines (million)	-	1.59	3.10	9.20	18.59	32.32	55.24
No. of National Carriers	1	2	2	2	2	2	2
No. Of Operating ISPs	18	35	35	36	69	117	117
No. of Fixed Line Operators	9	17	20	22	26	26	29
No. of Licensed Mobile Operators	1	4	4	4	4	4	4
Tele-density	0.73	1.89	3.35	8.50	16.27	24.18	41.21
Investment (US\$ million)	50	2100	4000	6000	7500	8150	11500

Source: Nigeria Communication Commission (CBN Report 2007)

Table 5.14 Percentage Distribution of households by State/type of Electricity Supply, 2007

State	PHCN Only	Rural Electrification only	Private Generator only	PHCN/Generator	Rural Electrification/Generator	Solar Energy	None
Abia	44.5	0.1	5.9	15.2	0.5	0.0	33.8
Adamawa	22.3	0.0	1.0	4.9	0.5	0.0	71.4
Akwa Ibom	46.3	2.7	3.3	7.6	1.9	0.0	38.3
Anambra	58.0	4.1	0.2	6.8	0.0	0.0	30.9
Bauchi	38.7	0.0	0.0	2.8	0.0	0.0	58.5
Bayelsa	10.3	10.1	13.3	5.8	37.8	0.5	22.2
Benue	15.7	0.0	2.8	2.5	0.5	0.0	78.6
Borno	19.4	4.6	10.6	0.9	0.1	0.0	64.5
C/River	54.1	0.5	3.2	1.7	3.4	0.0	37.1
Delta	62.7	0.0	2.5	3.0	1.6	0.0	30.2
Ebonyi	14.7	5.0	5.0	0.3	1.5	0.0	73.5
Edo	80.7	0.0	1.5	0.9	0.0	0.1	16.9
Ekiti	56.7	0.0	1.2	0.8	0.0	0.0	41.3
Enugu	45.6	0.2	3.6	5.5	0.3	0.0	44.8
Gombe	50.7	0.0	0.0	0.0	0.0	0.0	49.3
Imo	68.5	1.4	5.2	4.1	0.1	0.0	20.8
Jigawa	39.4	0.0	0.2	0.4	0.0	0.0	60.0
Kaduna	53.5	0.5	1.2	2.9	0.2	0.0	41.8
Kano	59.6	0.0	0.0	0.8	0.0	0.0	39.6
Katsina	31.0	0.0	0.1	6.8	0.2	0.0	62.0
Kebbi	44.2	0.0	1.5	1.7	0.0	0.0	52.6
Kogi	52.1	0.0	2.3	2.4	0.3	0.0	43.0
Kwara	54.9	0.0	1.5	4.7	0.5	0.0	38.3
Lagos	67.3	0.1	0.5	30.8	1.1	0.0	0.2
Nassarawa	27.7	0.0	2.2	6.2	0.4	0.0	63.6
Niger	42.5	0.0	0.3	1.4	0.0	0.0	55.9
Ogun	71.3	0.4	0.3	0.9	0.1	0.0	27.1
Ondo	58.0	0.0	4.3	3.4	5.3	0.0	29.0
Osun	67.6	1.6	0.3	0.5	0.0	0.0	29.9
Oyo	57.3	0.9	0.2	11.8	0.0	0.0	29.8
Plateau	23.8	2.4	3.3	3.8	1.1	0.0	65.6
Rivers	24.6	7.4	16.3	4.7	10.4	0.0	36.6
Sokoto	35.7	0.3	0.7	0.8	2.3	0.0	60.3
Taraba	3.7	0.7	2.4	1.7	0.3	0.1	91.0
Yobe	16.2	0.4	0.1	0.3	0.2	0.0	82.9
Zamfara	24.7	0.0	0.3	2.4	0.0	0.0	72.7
FCT	36.6	0.0	11.7	19.8	0.6	0.0	31.3
Total	47.3	1.1	2.7	5.8	1.6	0.0	41.4

Source: NBS/CBN/NCC (2008)

Table 5.15 Exchange Rate Movement (Naira per US dollar) 2004-2007

CBN DAS/WDAS RATE					BUREAUX DE CHANGE			
MONTH	2004	2005	2006	2007	2004	2005	2006	2007
January	136.08	132.86	130.29	128.28	147.65	139.8	144.09	130.04
February	135.16	132.85	129.57	128.27	142.95	139.93	145.47	130.00
March	134.47	132.85	128.70	128.15	139.92	139.73	148.46	129.34
April	133.51	132.85	128.47	127.98	138.85	141.77	147.85	129.00
May	133.01	132.86	128.45	127.56	139.64	141.21	142.33	129.16
June	132.75	132.87	128.45	127.41	140.00	141.85	136.82	128.32
July	132.80	132.87	128.38	127.19	139.84	143.94	130.12	127.52
August	132.83	133.23	128.33	126.68	140.33	145.82	130.46	127.39
September	132.84	130.81	128.29	125.88	141.08	145.80	130.21	126.50
October	132.86	130.84	128.28	124.28	140.54	144.99	130.30	126.50
November	132.87	130.63	128.29	120.12	140.69	143.94	129.82	123.80
December	132.87	130.29	128.29	118.21	138.71	141.93	129.32	121.39
Average	133.50	132.15	128.65	125.83	140.85	142.56	137.10	127.41
End-Period	132.86	130.29	128.27	117.97	138.50	141.50	129.50	121.00

National Bureau of Statistics 2008

5.16 State Poverty Intervention Policies

5.16.1 Food and Poverty Reduction Policies (1979 – 1985)

Operation Feed the Nation was initiated in 1979 by military regime of Gen. Olusegun Obasanjo. The programme had the specific focus of increasing food production on the premise that availability of cheap food will mean higher nutrition level and invariably lead to economic growth and development. OFN lasted until Shehu Shagari's democratically elected government took over in 1979. This programme which also emphasised on food production was replaced with *Green Revolution (1979-1983)*, under Shehu Shagari's democratic regime.

The military government of Gen. Muhammed Buhari (1983-1985) did not have a specific poverty alleviation programme but the regime focused on fighting indiscipline and corruption. This initiative then known as *WAI (War Against Indiscipline)*, sought to promote a military-style regimen of discipline. Some analysts argue that the fight against indiscipline and corruption were equal to a poverty alleviation programme in the sense that the two were partly the reason why many Nigerians are poor.

Source: FGN 2007

5.16.2 Food and Poverty Reduction Policies (1985-1993)

This period was military administration of Gen. Ibrahim Babangida and he was known to be one head of state that introduced several poverty alleviation programmes. These include *Peoples Bank*, which sought to provide loans to prospective entrepreneurs on soft terms and without stringent requirement of collaterals. It also regulated to an extent the activities of community banks that also promoted as adjuncts of the Peoples Bank and as sources of cheap loans for rural households and their communities.

Another programme was the *Directorate of Food Roads and Rural Infrastructure* (DFRRI) which sought to open up rural areas via construction of feeder roads and provision of basic amenities that would integrate rural areas into production centres for the national economy. The DFRRI was on offer as the most comprehensive programme on the nation's war against poverty. Considering the fact that rural populations in Nigeria are significantly poorer than their urban counterparts, this programme targeted this core group.

The programme was just not to open the rural areas, but the hinterland, which ordinarily would not have been accessible. It also aimed at promoting rural employment based on the assumption that if rural infrastructure, such as electricity, was available in the villages, many local business activities would operate from there, instead of scrambling for spaces in congested urban centres. On the other hand, DFRRI assumed that if the hinterland was linked by road, farmers would transport their products to the markets easily and at cheaper rates, thereby reducing the cost of food production as a way out of poverty.

Another programme that was aimed at reducing the scourge of poverty by targeting the agricultural sector was the *Nigerian Agricultural Land Development Authority (NALDA)*. The scheme was intended to reduce the prevalence of subsistence agriculture in the country and in its place introduce large scale commercial farming by assisting farmers with inputs and developing land for them to the point of planting at subsidised rates.

While all these programmes collapsed at one point or the other, nonetheless, at least one of these programmes that had a long lasting period up till date was *National Directorate of Employment (NDE)*. By its mandate, NDE was to design and implement programmes to combat mass unemployment and articulate policies aimed at developing work programmes with labour intensive potentials.

This scheme could be adjudged as the most successful of Babangida's poverty alleviation Programmes. The regime saw unemployment situation as one of the key factors challenging the agenda of government since it posed a potential danger to the socio-political and economic system of the nation. The need for the creation of NDE is also traced to the drastic reduction in oil process and the resultant economic policies at the time. The situation led to low capacity utilization in the nation's industries and the outright closure of some.

It is on record that hundreds of thousands of youths have benefited from the NDE scheme through its four-pronged approach that include Vocational Acquisition Training (673,000) Entrepreneurial (Business) training (373366), Training for Rural Employment and Training for Labour-Based works programme. In 2000 alone, NDE stated that 21708 youths received training in vocational skills in 36 states of the federation and Abuja, while 5075 graduated in different trades. The directorate asserts that it have disbursed N526 901313.11 since its inception. One of the drawbacks on NDE's scheme is that there is no follow-up programme on beneficiaries.

As a rider to all poverty alleviation programmes enunciated over the years, wives of Head of State also joined in the promotion of novel programmes that not only elevated the status of these First ladies but also focused on issues of poverty, using state funds to target households and women welfare. In this regime was the ***Better Life for Rural Women*** by Mrs. Mariam Babangida.

Source: FGN (2007)

5.16.3 Food and Poverty Reduction Policies (1993-1998)

This was the regime of Gen. Sani Abacha. The government was known as the advocate of the *Family Economic Advancement Programme (FEAP)* in Nigeria's quest for a way out of absolute poverty, as this was the period that marked Nigeria's relapse into the global bracket of 25 poorest nations. Significantly, FEAP existed for about two years (1998-2000) during which it received funding to the tune of N7 billion out of which about N3.3 billion was disbursed as loans to about 21,000 Co-operative societies nationwide that were production oriented. Such projects targeted for assistance included poultry production, garri processing, soap making and animal husbandry. Mrs. Mariam Sani Abacha also introduced *Family Support Programme (FSP)* which introduced gender element into poverty programmes, acting on the assumption that women needed special treatment in the light of their immense contributions to the national economy, both as small-scale entrepreneurs and home keepers.

Source: FGN 2007

5.16.4 Food and Poverty Reduction Policies (1999-2007)

This was the democratic administration of Retired Gen. Olusengun Obasanjo. He approved a blueprint for the establishment of the National Poverty Eradication Programme (NAPEP) - a central coordination scheme for all anti-poverty efforts from the Local government level to the National level by which projects would be executed with sole purpose of eradicating absolute poverty. The schemes identified included: Youth Empowerment Scheme (YES), Rural Infrastructures Development Scheme (RIDS), Social Welfare Services Scheme (SOWESS) and Natural Resources Development and Conservation Scheme (NRDCS).

On the whole, these projects would spearhead the government's ambitious programme of eradicating absolute poverty – a condition where a person or group of persons are unable to satisfy their most basic requirement for survival in terms of food, clothing, shelter, health, transport, education and recreation. With a take-off grant of N6 billion approved for it in 2001, NAPEP has established structures at all levels nationwide.

Under its capacity Acquisition programme (CAP), NAPEP trained 100,000 unemployed youths just as 5,000 others who received training as tailors and fashion designers, were resettled. A total of 50,000 unemployed graduates have benefited from NAPEP's Mandatory Attachment Programme, which is also an aspect of CAP.

Having subscribed to the UN-inspired Millennium goals of having global poverty by 2015, Nigeria has embraced the process of outlining its own Poverty Reduction Strategy Process (PRSP) which will eventually bring its anti-poverty efforts into mainstream of new global thinking that fighting poverty needed to be driven by some acceptable principles. PRSP have developed a national strategy known as The National Economic Empowerment and Development Strategy (NEEDS). Its goals are wealth creation, employment generation, poverty reduction and value reorientation while its macroeconomic framework consists of: changing the way the government does its work, promoting private enterprise and empowering people.

Changing the Way the Government Does Its Work:

Public sector reforms, privatization and liberalization, governance, transparency and anticorruption, service delivery, budget, and expenditure reforms

Promoting Private Enterprise:

Security and rule of law, infrastructure finance, sectoral strategies, privatization and liberalization, trade, regional integration, and globalization

Empowering People:

Health, education, environment, integrated rural development, housing development, employment and youth development, safety nets, gender and geopolitical balance, and pension reforms.

Source: FGN (2007)

5.16.5 The National Programme for Food Security (NPFS)

Food security exists when all people, at all times, have access to sufficient safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life according to CBN (2007). The National Programme for Food Security is an initiative of the Federal Government of Nigeria and the Food and Agricultural Organisation (FAO) for poverty reduction in line with the thrust of the National Economic Empowerment and Development Strategy (NEEDS). It focuses attention on the application of innovative low cost technologies towards improving the productivity and sustainability of agricultural systems, with the ultimate objective of contributing to better the livelihood of farmers, through a bottom-up development approach.

In May 2000, the FAO signed an agreement with the Nigerian Government for a unilateral Trust Fund Project worth US\$45.2 million in support for the National Programme for Food Security (NPFS) in Nigeria. The Federal Government of Nigeria implemented the NPFS with its human and financial resources, while the FAO provided technical support on demand to the Government. The broad objective of NPFS was to attain food security in the broadest sense and alleviate rural poverty in Nigeria. The specific objectives according to CBN (2007) include-

- Assist farmers in achieving their potential for increasing output and productivity and consequently their incomes on a sustainable basis;
- Strengthen the effectiveness of research and extension services in bringing technology and new farming practices development by research institutes to farmers and ensuring greater relevance of research to the practical problems faced by small farmers;
- Concentrate initial efforts in pilot areas for maximum effect and ease of replicability;
- Improve upon experience gathered internationally for a broader approach;
- Complement and refine the ongoing efforts of government in the promotion of simple technologies for self-sufficiency and surplus production in small-scale rain-fed and irrigation farming;
- Train and educate farmers in the effective utilisation of available land, water and

- Utilize international experience for farming practice to maximise the use of existing facilities and knowledge.

The programme involved technical assistance in such areas as root and tuber, cash and arable crops, animal traction, poultry, soil testing, grains cultivation, vegetable production, animal fattening and provision of grinding machines. It supported various components of agriculture, ranging from irrigation farming to the construction of micro-earth dams and sinking of tube wells and irrigation systems. The NPFS played a central role in achieving Government's agricultural production for certain priority crops and commodities such as rice, cassava, yam, sorghum, millet and vegetables.

In 2004, the FAO adjusted the NPFS model the best in the world and it was recommended to other countries. The budget for the expansion of the NPFS to cover the five year period amounts to US\$355.0 million. Funding is obtained from a variety of sources with the Government of Nigeria bearing a large portion of the cost, supplement by the World Bank, the African Development Bank (ADB), and the International Fund for Agricultural Development (IFAD), the European Union (EU) and the Arab Bank for Economic Development in Africa.

Source: CBN (2007)

Table 5.17 Population of Ebonyi State of Nigeria by Local Government Area (2006)

Local Government Areas (LGA)	2006 Population		
	Male	Female	Total
Abakaliki	72,443	79,280	151,723
Afikpo North	77,368	79,243	156,611
Afikpo South	76,023	81,049	157,072
Ebonyi	59,710	67,127	126,837
Ezza North	68,535	77,084	145,619
Ezza South	63,610	69,595	133,205
Ikwo	98,982	115,622	214,604
Ishielu	76,336	74,712	151,048
Ivo	59,986	60,933	120,919
Izzi	110,072	124,000	234,072
Ohaozara	72,042	76,584	148,626
Ohaukwu	92,848	103,489	196,337
Onicha	113,029	123,799	236,828
Total	1,040,984	1,132,517	2,173,501

Source: National Population Commission (NPC) (NBS 2007)

APPENDIX 6.

QUESTIONNAIRE ON RURAL LIVELIHHOD, FARM AND NON-FARM DIVERSIFICATION, BY PAUL AGU IGWE (UNIVERSITY OF PLYMOUTH)

(a) Personal Profile of Local Entrepreneur and Household Characteristics

1. Age in years	2. Gender 1=M 2=F	3. Marital Status	4. Where was born	5 (a) Highest Education completed	5 (b) Number of years spent in education	6. Reason for not continuing education?

Use codes for Questions 3, 4, 5a, 6 (see codes in next page)

7. Any Technical Training? 1=YES 2=NO	8. If Yes to Q7: What was the training	9. Type of work? 1=Farm work only 2= Farm & non-farm	10. Main Occupation	11. Number of household members	12. Number of males	13. Number of females

Use codes for Questions 8, 10 (see codes in next page)

15. Number of adult Household members in employment or working in the farm or non-farm jobs	16. Number of Households aged 16 years and above without completed Primary education	17. Number of Households aged 16 and above with completed Primary education	18. Number of Households aged 20 years and above without completed secondary education	19. Number of Households aged 20 years and above with completed secondary education	20. Number of Household with completed Degree education

b) Migrated Household members

21. Number of Migrated Household members that send Remittance	22. Number of male migrated Household members	23. Number of Female migrated Household members	24. Highest Level of education of migrated Household members	25. Where Head of Household migrates who takes charge of farm/businesses?

Use codes for Questions 24 and 25 (see codes below)

Codes for Q3 Marital Status: 1=Married, 2= Never married, 3=Divorced or Separated, 4= Windowed.

Codes for Q4. Where was Born: 1= this village, 2= another village but same LGA, 3= City, 4= Foreign Country;

Codes for Q5(a). Highest Education: 1=No education, 2=Uncompleted Primary, 3=Completed Primary Level 6, 4=Uncompleted Secondary, 5=Completed Secondary, 6=Uncompleted Diploma/Certificate course, 7=Completed Diploma/Certificate Course, 8=Completed National Certificate in Education (NCE), 9=Uncompleted University, 10= Completed University Degree or postgraduate

Codes for Q6. Main Reasons for no further education: 1=Financial difficulties, 2=active participation in farm and non-farm work, 3=Parents to blame, 4=didn't know the importance of education, 5=lack of nearby school, 6=lack of Government support, 7=others.....

Codes for Q8. Training or Apprenticeship received: 1=trading, 2=crop production, 3=animal production, 4=General Agriculture, 5=technical work, 6=manufacturing work, 7=food processing, 8=electrical/mechanic work, 9=building/construction work, 10=None

Codes for Q10. 1=farm work only, 2= non-farm work only, 3=In charge of both farm and non-farm enterprises, 4= public service work in addition to farm/nonfarm work, 5= Public service and farm work only, 6=Public service and non-farm work/or trading, 7=Farm work and trading or merchandise, 8 =Farm work and production/manufacturing work or construction, 9=farm work and craft, technical or engineering work, 10 other occupation not listed.

Codes for Q24. 1=Completed Primary Education, 2=Completed Secondary education, 3=Completed Diploma/Tertiary education, 4=Completed University Education, 5=No education.

Codes for Q25. 1=Wife, 2=Household most elder member or any other child, 3=Employed person.

(C) Employment History of Head of Household and Income activities

26. Main or most important employment or Job in 2009	27. Main or most important Employment or Job in 2005	28. If there was change in job? Main reason for the change?	29. How much do you receive or paid man-day per person for farm jobs?	30. Payment received or paid person per man-day for non-farm work

See codes below for Questions 26, 27 and 28.

31. If food was given as form of payment of labour, total value of food received per month?	32. Total expenditure associated with Total Household non-farm earning in naira 2009	33. Number of household members working in family farm and non-farm work - part or full time?

(D) Start-up Capital for Farm and Non-farm Income activities

34. Who is in charge or the Manager of the farm?	35. What year did you set-up or start farming?	36. How much was the initial start-up capital for setting-up farming?	37. What year did you set-up or a non-farm business or trading?	38. How much was the start-up capital used in setting up non-farm businesses?	39. Source of finance used as start-up capital for non-farm business?

Use codes below for Questions 34, 39 and 40.

Codes for Q26 and Q27. 1=in charge of farm work, 2=in charge of non-farm work/businesses, 3= in charge of both farm and non-farm businesses, 4=both farm and non-farm paid labour jobs, 5=Salaried employment and paid farm work, 6=salaried employment and paid nonfarm work, 7=salaried employment and own farm work, 8=salaried employment and own nonfarm business,9= other employment.

Codes for Q28. 1=to earn more wage/income, 2=moved location, 3=land availability, 4=lack of land, 5=received extra capital for investment, 6=lack of capital for investment, 7=environmental hazards, 8=government policy, 8=lack of market or low demand for goods and services, 9=Not applicable.

Codes for Q34: 1=Head of Household, 2=wife, 3=eldest child, 4=hired/salaried employed manager.

Codes for Q39 & 40: 1=income/savings from farm paid work, 2=income/saving from non-

farm work/trading, 3=savings from both farm and off-farm and non-farm work; 4=income/savings from salaried employment, 5=loan from informal money lenders, 6=loan from formal money lenders/banks, 7=capital from parents or remittance from household members, 8=government grants or loan scheme, 9=sale of land or family assets; 10=Not applicable.

(E) Types of income activities, most important job and job locations

40. Source of start-up capital for farming	41. Main occupation (2009)	42. Second occupation in 2009?	43. Main occupation (2005)	44. Second occupation in 2005?	45. Most important Job (2009)	46. Most important Job (2005)

Use codes below for Questions 41-46

Codes for Q41 to Q44: Job codes: 1=agriculture/farm work, 2=manufacturing work, 3=construction work, 4=mining work, 5=technical or service sector work, 6=merchandise or trading, 7=transportation, 8=tailoring or carpentry, 9=Public service or teaching, 10=other jobs not listed, **Codes for Q45 to 46:** 1=Farm work; 2=nonfarm work; 3=both; 4=salaried job; 5=other (specify).....

47. Job Location in 2009	48. Job Location in 2005	49. Most important factor encouraging households sending children to schools	50. Most important factor discouraging household sending children to schools	51. Most important factor affecting rural agricultural productivity.	52. Most important factor affecting rural nonfarm businesses.

Use codes below for Questions 47, 48, 49, 50, 51 and 52

Codes for Q47 to Q48: Job Location: 1=this village; 2=nearby village; 3=this local district; 4=urban/city; 5=another state, 6=foreign country. **Codes for Q49:** 1=in order to attract good job or higher income in future; 2=government legislation enforcing children education; 3=higher farm income; 4=higher nonfarm income; 5=family social prestige; 6=low farm activities; 7=others (specify) **Codes for Q50:** 1=high rate of unemployment among school leavers; 2=tradition or custom or religious activities; 3=low farm income; 4=low nonfarm income; 5=lack of family social ambition; 6=high farming activities; 7=others (specify). **Codes for Q51 to Q52:** 1=prices received for goods and services; 2=prices paid out for goods and services; 3=climatic conditions; 4=labour availability and cost; 5=land availability and cost; 6=level of infrastructure; 7=subsidies and grants; 8=financial capital.

53. What is the main purpose for farm crops?	54. What is the main purpose for Livestock animals?	55. What proportion of crops is sold for cash?	56. What proportion of crops is consumed by the family?	57. What proportion of livestock is sold for cash?	58. What proportion of livestock is consumed by the family?

Use codes below for Questions 53, 54, 55, 56, 57 and 58.

Codes for Q53 and Q54: 1=for sale only, 2=for sale and family consumption, 3=for family consumption only. **Codes for Q55, Q56, Q57, Q58, Q59 and Q61:** 1=0-30%; 2=31-49%; 3=50-60%; 4=61-79%; 5=80-90%; 6=91-100%; 7=none

(F) Past 5 Years Investment plans

59. In the past 5 years what percentage Income from non-farm have you invested in farm activities?	60. Amount in real value Income from non-farm to farm investment for the past 5 years in Naira.	61. In the past 5 years what percentage Income from farm have you invested in non-farm businesses?	62. Amount in real value Income from farm to non-farm investment for the past 5 years in Naira.

(G) Next 5 years Investment plans and Role of farm and nonfarm jobs.

63. In the next 5 years which of farm or non-farm do you plan to invest or increase investment? 1=farm 2=non-farm	64. What type of farming activity do you plan to invest in the next 5 years? Please state:	65. What type of non-farm business or activity do you plan to invest in the next 5 years? Please state:	66. How much in monetary terms (naira) do you plan to invest in next 5 years in farming?	67. How much in monetary terms (naira) do you plan to invest in next 5 years in non-farm activity?

68. Which of farm and non-farm job activity is the most important source of household income? 1=Farm; 2= Non-farm	69. How important could you describe non-farm incomes for your household survival? Rank 1 to 5; use 1 for least important and 5 for most important.	70. How could you describe the main role of non-farm jobs and businesses? 1= as main source of household income; 2= source of extra family income

(H) Size/value of Land owned and farm size past 5 years

71. Size (ha) 2009	72. Size (ha) 2008	73. Size (ha) 2007	74. Size (ha) 2006	75. Size (ha) 2005

76. Value per plot in 2009	77. Value per plot in 2008	78. Value per plot in 2007	79. Value per plot in 2006	80. Value per plot in 2005

Farm sizes (Farm land cultivated in the last 5 years?)

81 (a) Farm Size (ha) 2009	82 (b) Percentage of farm land that is owned 2009	83. Farm Size (ha) in 2008	84. Farm Size (ha) in 2007	85. Farm Size (ha) in 2006	86. Farm Size (ha) in 2005
	%				

87. How is land acquired in this village?	88. Is land ownership an obstacle to farming? 1= Yes; 2= No	89. Is cost of land an obstacle to farming? 1=Yes 2=No	90. Is cost of land an obstacle to nonfarm business? 1=Yes 2=No	91. Can land be used for loan collateral? 1= Yes 2=No	92. Do you have the right to transfer land? 1= Yes 2=No	93. Value of Farm Capital or savings
94. Could you estimate income earned from sale of Crops/ vegetable/ fruits 2009	95. Could you estimate income earned from sale of animals/ eggs in 2009	96. Total income from all non-farm job/work in 2009	97. Income from sale of household assets excluding land	98. Income from sale of land/ buildings		

99. Remittance from migrated household members	100. Income from other salaried work	101. Income from Government social benefits	102. Cash value of Gifts from people in kind	103. Total annual income (excluding income from sale of land, assets, remittance)

(I) Weekly consumption expenditure and purchases on food items

1. Yam	2. Cassava	3. Rice	4. Cocoyam	5. Maize/flour	6. Millet	7. Beans	8. Potatoes	9. Meat	10. Chicken

11. Eggs	12. Fish	13. Crayfish	14. Melon	15. Bush mango	16. Ground nuts	17. Vegetable	18. Oil	19. Onions	20. Salt

21. Seasonings	22. Milk	23. Tea/ coffee	24. Fruits	25. Beverages	26. Baby foods	27. Others

104. Total Weekly Household Expenditure on food (calculated from adding expenditures on items 1 – 27 above)

Consumed but owned Goods in 2009: Please could you provide the monetary value (weekly) of all items produced in your farm or taken from your shop but consumed by your family?

1. Cassava	2. Yam	3. Rice	4. Beans	5. Potatoes	6. Maize	7. Millet	8. Groundnut	9. Beef	10. Goat

11. Lamb	12. Pork	13. Fish	14. Wild Meat	15. Poultry	16. Eggs	17. Vegetables	18. Fruits	19. Milk	20. Others

105. Total weekly value of all food owned but consumed in 2009 (calculated by adding value of items 1 to 20 above)

Non-food Monthly Household Expenditure; Please how much did your household spend monthly on following items 1-14 below?

1. Fuel for Generator	2. Paraffin	3. Wood/ charcoal	4. Batteries	5. Soap/ Cream /Paste	6. Water	7. Phone bill

8. Medicines/ hospital bills	9. Tobacco/ beer/ wines	10. School materials	11. Home items repairs	12. Travel and transport expenses	13. House rent	14. Others (specify)

106. What was the total monthly non-food household expenditure? (Calculated from adding items 1 to 14 above)

(J) Crop Production Expenditure in naira 2009.

107. Hired Labour	108. Land rental	109. Farm Equipment	110. Seeds	111. Fertilizer & Chemicals	112. Irrigation cost	113. Transport & Packaging	114. Other costs

(K) Value of tools and Equipments used for farming (Past 5 years) 2005 to 2009

115. Value in 2009	116. Value in 2008	117. Value in 2007	118. Value in 2006	119. Value in 2005

(L) Livestock and Fishing activities and costs of Production

120. If you are engaged in livestock farming; how many livestock animals do you currently have? Number of livestock owned.....

121. Did you engage in fishing activities? ☐ Use codes 1=Yes; 2=No

(M) Ownership and Management of Non-farm businesses and activities

122. Did you or any member of your household engage or wanted to engage in any non-farm self-employed activities during the last 5 years? For instance, did any member of your household operate his or her own non-farm production, trade, business or services?

Use codes 1= Yes and 2=No. ☐

If you have answered 'Yes' what are the constraints that prevent members of this household from engaging in or continuing operation of a non-farm activity, business, trade or services in this locality? Please provide information for 132 to 134.

Constraints affecting operation of non-farm production and businesses or trade in rural villages	123. Most Important constraint (Choose one only)	124. Second most important constraint (Choose one only)
1. Lack of start-up capital		
2. Lack of access to formal loan and formal credit		
3. No access to electricity		
4. Poor quality of electricity / constant power failure		
5. Insufficient or lack of water supply		
6. Poor road quality		
7. High cost of financing (e.g. interest rates)		
8. Poor market and lack of market information		
9. Gender issues		
10. Low market demand for goods and services		
11. Tedious registration of businesses/ licence		
12. High tax rate		
13. Unavailability of skilled labour		
14. Lack of land and high cost of land		
Constraints to non-farm continued		
15. Agricultural land use regulations or ownership		
16. High cost of business premises		
17. Government restrictions		
18. Regulation of prices of agricultural products		
19. Governmental environmental policy		
20. Uncertain economic policy		
21. Too much crime, theft and social disorder		
22. Bad and corrupt legal system/ customary laws		
23. Lack of family good health		
24. Family members always migrating		
25. Other factor (specify)		

125. If you are already into non-farm business/activity or is planning to start one, what activity would it likely to be?	126. How much capital do you plan to invest more in the non-farm activity you plan this year or next year?	127. What is the source from where you tend to raise the capital or money for the planned non-farm activity?

If you answered 'NO' to Q122 above (that is you are not engaged in non-farm activities) what are the main constraints that prevented you or members of your household from starting up a non-farm enterprise. Please provide the information from table below Q128 to Q129.

Constraints that prevented household from starting non-farm	128. Most important reason or barrier (Please Tick one only)	129. Second most important reason/barrier (Please Tick one)
1. Lack of start-up capital		
2. Lack of access to formal credit from financial institutions/banks		
3. No access to electricity supply		
4. Poor quality of electricity supply and constant power failure		
5. Poor access to market		
6. Poor access to market information		
7. Lack of or poor telecommunication services		
8. Lack of good roads		
9. Low market demand for goods and services		
10. High cost of financing (high interest rates)		
11. Loan procedure too tedious		
12. Tedious registration/Licence process		
Constraints for not engaging in non-farm (continued)		
13. Expensive to register or obtain licence		
14. High tax rate		
15. Unavailable skilled labour supply		
16. Land ownership system and high cost of land		
17. Government regulation on agricultural land use		
18. Regulation on prices of commodities		
19. Strict environmental policy		
20. Uncertain economic policy		
21. Too much crime, theft and social disorder		
22. Corrupt and bad legal system		
23. Gender issues		
24. Customary laws in the community		
25. Other (specify)		

130. Percentage contribution of nonfarm to overall household food and non-food daily expenditure.	131. Did you engage in non-farm elsewhere before outside this village 1=YES 2=NO	132. If 'Yes' where? 1=this village 2=another village 3=City	133. How did you acquire this business? 1=set up by you 2=bought 3=inherited	134. What was the initial start-up capital when you acquired or inherited?
%				

135. What percentage of start-up capital came from farm income?	136. What percentage of start-up capital came from another non - farm income?	137. How many years of experience did you have before starting it?	138. Main Non-farm Business (could you state reason for Entry into this sector of business)	139. If you have left any Nonfarm in last 5 years (state reason for leaving)
%	%			

Use codes below for Questions 138 and 139

Code for 138: 1= have the knowledge and skills required; 2= parent/family line of business; 3= existing market opportunity; 4= new market opportunity; 5= family and friends advice; 6=availability of labour; 7= loan or bank requirement; 8= no reason. **Code for 139:** 1= lack of knowledge and management skills required; 2= lack of market; 3=high losses/low profit; 4= location; 5= competition; 6= lack of skilled labour; 7= new market opportunity; 8= death/illness; 9= government policy; 10= other (specify).....

140. What type of ownership was the non-farm activity	141. Current value of all non-farm business investment in 2009	142. Total expenditure associated with running non-farm businesses in 2009 (including labour, transport/packaging, electricity and licence/tax bills)	143. Who is in charge or manager of non-farm businesses?

Use codes below for Questions 140 and 143.

Codes for Q140: 1=sole; 2=Joint by this household & another; 3= multi-owned by more than 2 persons. **Codes for Q143:** 1=Head of household; 2=Wife; 3=Eldest child; 4=Employed manager; 5=Joint business partner.

144. Is business registered with Government? 1=Yes 2=No	145. How much was the cost of the registration?	146. How much are you paying for licence or tax annually?	147. If not registered, what is the reason?	148. What sector was the business?

Use codes below for Questions 147 and 148

Codes for 147: 1=registration not required; 2=registration cost too high; 3=to avoid tax; 4=lack of knowledge on how to register; 4=other reasons (specify).

Codes for 148:1=production/manufacturing; 2=trade; 3=services

149. How many employees do have in your last 12 months of operation?	150. How many of these employees are full time employed?	151. How many of these employees were part-time employed?	152. Did your business have market competitors? 1=Yes; 2=No

153. Who were your competitors? 1=local firms 2=public 3=foreign	154. Is your business being affected by these competitions? 1=Yes; 2=No	155. Why do you think your business is less competitive than other competitors?	156. How many competitors have left the market since past 5 years?	157. Was your business seasonal in terms of output? 1=Yes 2=No

Use codes below for Questions 155.

Codes for Q155: Reasons why business is less competitive: 1=better prices; 2=better product quality; 3=better location; 4=better distribution system; 5=financial stability; 6=better machines and equipment; 7=other (specify).

156. Have you ever applied for loan? 1=Yes; 2=No	157. Is the loan intended for farm or non-farm? 1=Farm 2=Non-farm 3=Both	158. If you never applied for a loan, what was the reason for not applying?	159. If you ever applied for loan (number of loans applied in the past 5 years)	160. The most recent year you have applied for loan?	161. Which source or financial organisation did you apply for the most recent loan?	162. What was the main purpose of the loan?

Codes for Q158: Reasons for not applying for loan: 1=not needed; 2=don't know how to apply; 3=no bank or money lenders available locally; 4=high interest rate; 5=no collateral; 6=other (specify).....

Codes for Q161: Sources of loan: 1=commercial banks; 2=micro finance Institute; 3=agricultural/cooperative bank; 4=informal money lenders; 5=Government agencies; 6=non-governmental agencies; 7=cooperative societies; 8=other village/church unions; 9=money contribution group; 10=others (specify).....

Codes for Q162: 1=purchase land; 2=production; 3=raw material or seeds; 4=machine/ equipments; 5=labour; 6=others.....

163. Were any of the loans approved? 1=Yes; 2=No	164. If the loan was not approved, what reason was given?	165. If the loan was approved, how long (in days) did it take to be approved?	166. How much did you apply for in your last loan application?	167. How much was approved or did you receive?	168. How long (in months) before you are required to repay the loan
169. Up to how much can you borrow from relatives/ friends if you wish to make more investments?	170. Up to how much can you borrow from informal money lenders if you wish to invest more?	171. Up to how much can you borrow from formal money lender if you wish to invest more?	172. Is there any local branch of any financial institution/bank in your locality? 1=Yes; 2=No		

173. Up to how much can you borrow from government agencies if you wish to make further investment?	174. Do you have enough information on how to apply for government or bank loan? 1=Yes; 2=No	175. Do you have a bank account either for personal, business or employment? 1=Yes; 2=No	176. If you have a bank account, how many transactions per month do you carry out?

(N) Social activities and membership of organisations.

177. Do you or any member of your household belong to any Social organisation?
1=Yes; 2=No (If Yes answer Q178 to Q187)

178. What is the name of social organisation/ club you or any of your HH belongs to?	179. Who is the founder of the club/ union? 1=Government 2=Local leader 3=members	180. Do any household member hold any executive position or play an active role in the union? 1=Yes, 2=No

181. Which year did you or any of your HH members become a member of the union?	182. How many meetings does he/she attend in 1 year?	183. Do men and women belong to the same union or club? 1=Yes 2=No

184. If you answered 'No' to Q183 above (that is men and women are not registered in the same club or union), Give reasons why men and women don't belong to the same group?

.....

Benefits and assistance From the list below select for Q185 to Q187	185. Most important benefit members receive from the union or club? (Tick only one from the list)	186. Second most important benefit members receive from the union or club? (Tick one only)	187. Third most important benefit members receive from the union or club? (Tick one only)
1. Money/loan			
2.Free labour on farm and off-farm			
3.Farm inputs/seeds supply			
4.Food support and home improvement			
5.Training on new skill & technology			
6.Marketing and information			

(O) Sources of Rural information (Use codes 1=Yes and 2=No for Q225 to 231)

188. Do this village have telephone lines? 1=Yes, 2=No	189. Do this village have mobile phone access?	190. Do this village have access to internet services?	191. Do your household have a radio system?	192. Do your household have a television system?	193. Have you ever received advice from extension agents?	194. Have you ever received advice from business advisers?

Sources of Government and market information/news in rural communities

(Use codes 1=Radio; 2=Television; 3=Internet/online 4=Extension agents/government officials/NGOs; 5=Local leaders & town unions; 6=Political parties; 7=Educated family members; 8=others.....)

195. Which of 1-8 above is the most important source of government information and news in this village?	196. Which of 1-8 above is the second most important source of government information and news in this village?	197. Which of 1-8 above is the third most important source of government information and news in this village?	198. Which of 1-8 above is the most important source of market and prices information for goods and services?	199. Which of 1-8 above is the second most important source of market and prices information for goods and services?	200. Which of 1-8 above is the third most important source of market and prices information for goods and services?

201. Which of either farm or non-farm businesses could you describe as more profitable? 1=Farm; 2=Non-farm	202. Do women own or inherit land the same way as men?	203. If 'No' to Q202; how do women own land in this community?	204. Did you always grown the same crops and livestock since you started farming? 1=Yes; 2=No	205. Do you always engaged in adoption of new varieties or breeds or planting techniques in farming? 1=Yes; 2=No

Codes for Q206, 207, 209 & 210: 1=New technology; 2=Extension or new training; 3=to earn higher income; 4=low production cost and expenses; 5=Remittance from migrated family members; 6=Loans obtained; 7=Cooperative society/other unions; 8=others (specify)

206. If 'No' to Q204 What is the first most important reason for the change?	207. If 'No' to Q204 What is the second important reason for the change?	208. Have you always used the same implement or tools for your farm work? 1=Yes; 2= No	209. If 'No' to Q208 What inspired the change? (First most important reason)	210. If 'No' to Q208 What inspired the change? (Second reason)
211. What is your main aim in farming? 1=to feed the household 2=main source of income 3=extra income support 4=to accumulate wealth		212. Do your HH feel life is a struggle or you are living in poverty or you are living on less than \$1 (130 naira) a day per person? 1=Yes; 2=No	213. Do you think the various incomes of your household are enough to provide your daily household consumption and other needs? 1=Yes; 2=No	

214. How much monthly income do you estimate your Household need for a daily living.....?

215. Please could you state other natural resources sources you derive some income or living? (Wildlife, fishing, stones/ quarry, forest logging etc).....

216. From the list 1-13 below, which is the most important source of fund for investment for past 5 years?	217. From the list 1-13 which is the second most important source of fund for investment for past 5 years?	218. From the list 1-13 which is the third most important source of fund for investment for past 5 years?

(Use codes below for Q216 to 218)

Codes for sources of fund Q216 to 218: 1=Income from sale of farm produce; 2=Income from non-farm work; 3=Wages from off-farm employment; 4=Wage from paid farm labour; 5=Wage from salaried skilled or professional work; 6=capital from sale of landed properties & family assets; 7=Loan from private lenders; 8=Loans from bank; 9=Loan from government agencies; 10=Loans from NGOs; 11=Money borrowed from friends and relatives; 12=Remittance from migrated family; 13=others (specify).....

Q219. What was the main shock or disaster that your farm or business suffered over the last 2 years of operation? Use codes: 1=Litigation in court; 2=Impassable roads; 3=Fire; 4=theft/vandalism; 5=lack of rainfall; 6=flooding; 7=illness; 8=others; 9=none

Q220. How big was the loss or shock? Mark 1-5, 1=minor and 5=major

(P) Investigation into Rural Investment climate: Please could you mark 1-5 (1=lowest and 5=highest) degree of obstacle for the following factors of affecting rural businesses

221. Access to rural electricity.	222. Quality of electricity	223. Water supply	224. Lack of postal services	225. Quality of roads
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
226. High cost of transport	227. Available transport system	228. Access to micro- financing	229. Interest rate on loans	230. Collateral requirement
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

231. Amount of loan approvable	232. Lack of market information	233. Low demands for goods and services	234. Licence and registration costs	235. High tax system
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

236. High cost of labour	237. Skilled labour availability	238. Land use and ownership policy	239. Farm subsidy & agricultural policies	240. Price control policy
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

241.Import and custom policy	242. Export regulation policy	243. Food and environment policy	244. Corruption within the society	245. Economic uncertainty
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

246. Crime, theft and social unrest	247. Legal system	248. Access to information	249. Poor health care/ high medical cost	250. HIV/ AIDs
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

251. Gender issues and discrimination against women	252. Discrimination against work women and men can do	253. Discrimination against women ownership of land	254. General business environment within your locality

(Q) Potential Diversification activities and driver of diversification

How much of your total household income do the following sources contribute? If a particular item contributes nothing please leave blank.

Activities	(1) < 20%	(2) 21-40%	(3) 41-60%	(4) 61-80%	(5) 81-100%
255. Farming and on-farm work					
256. Agricultural paid employment					
257. Non-farm Enterprises					
258. Non-farm paid employment					
259. Unearned income/remittance					

260. How many people does your farm employ in agricultural activities only.....?

261. How many people are in full-time employment.....? And (304) part-time.....?

262. Have you diversified into non-farm enterprises (1=Yes; 2=No.)

If you have diversified into any of the activities listed below in the last 5 years? Please tick all that apply to you.

263. Retail	a) farm/food items shop	b) Multi-purpose shops	c) Craft centres	d) Water-based business	e) other retail (please state)

264. Services	a) Contact agriculture	b) Commercial property	c) Business services	d) Other services (please state)

265. Production	a) Food production	b) Other production (please state)

266. Land based	a) Organic produce	b) Woodland /forestry	c) Other land based

267. Tourism	a) Tourist accommodation	b) Tourist attraction	c) Other tourist

NON-DIVERSIFIERS

268. If you have NOT diversified, why? Please tick one main factor from the list of 12 below discouraging diversification:

1. Farming brings sufficient income		7. Risk of diversification	
2. Insufficient knowledge		8. Want to concentrate on farming	
3. Planning restrictions		9. Lack of time	
4. Insufficient capital		10. Lack of demand	
5. Remoteness		11. Restrictions of tenancy	
6. Personal age		12. Other (state)	

DIVERSIFIERS: REASONS FOR DIVERSIFICATION

269. Why did you diversify your operations? Please tick one main reason from list below.

1. To generate sufficient income	
2. To diversify away from agriculture	
3. Availability of government grant	
4. Conservation and environmental reasons	
5. To employ family members	
6. Identification of market opportunity	
7. Other (specify)	

270. Have your diversified enterprises created any NEW jobs? 1=YES, 2= NO

271. How many full-time and part-time jobs have been created?

272. Have the jobs created been filled by members of your family? 1=Yes; 2=No; 3=some but not all of the jobs

273. If jobs have been filled by non-family members, what percentage of new employees has been recruited: Locally ____% regionally ____% National level%

274. In the next 5 years do you expect to (1) increase number of employees working for you; (2) maintain or reduce number of employees; (3) none applicable

275. Have you sold any farmland for commercial development? 1=Yes, 2=No

276. If 'YES' to Q318, Has this development led to the creation of any jobs?
1=Yes, 2= No

If **Yes** please estimate how many full-time and part time jobs that was created from the development. Full time jobs..... and part-time jobs.....?

277. What is your business plans generally for the next 5 years? Use codes
1=Expand farm business; 2=Expand or increase non-farm business only; 3=Expand both farm and non-farm; 4=Decrease production or size of businesses; 5=Learn new skill and seek for regular employment; 6=Sell of businesses and migrate out of the village to the city for work.

What factors are driving forces behind your actions in Q277? Tick the ones that apply to you.

FACTORS	278. Factors in favour of your decision (Tick)	279. Factors against your decision (Tick)
1) High Income from farm		
2) High Income from non-farm		
3) Low farm Income		
4) Low non-farm Income		
5) High cost of land		
6) Low cost of land		
7)Availability of market		
8) Lack of market		
9) Availability of loans		
10) Non-availability of loan		
11) Transportation		
12) Other (specify)		

General Household and Community Level Livelihood outcomes

280. Name of this village	281. Name of the Local Government Area (LGA)	282. Geo-graphical location in Ebonyi State

283. What public schools do you have in your village.....?

284. Do you feel government should do more to improve your community? **1=Yes; 2=No.....**

285. What is the 'Most important' means of transport owned by your household?

286. What is the 'Second most important means of transport owned by your household?

287. What is the 'Most important' means of public transport in this locality?

288. What is the 'Second most important' means of public transport in this locality?

289. Do you household or business draw from public electric power sources?

1=Yes; 2=No.....

290. If you have answered 'No' to Q289, Is the village connected to public electric power sources? 1=Yes; 2=No.....

291. If you have answered 'Yes' to Q289, what is the average monthly cost of electric power bill to your household?

292. Could you estimate average days per month there was power failure or under power current.....days and.....months?

293. What alternate source of electricity do your household have.....?

294. Do you own motor vehicle or car? 1=Yes, 2=No	295. How much is current value of one of the vehicle?	296. How much would be the value of similar vehicle last 5 years?	297. Do you own a motorcycle? 1=Yes 2=No	298. How much is the current value of the motorcycle?

299. How much would be the value of similar motorcycle last 5 years?	300. Do you own a bicycle? 1=Yes 2=No	301. How much is the current value of the bicycle?	302. How much is the value of similar bicycle last 5 years?

303. How important is mobile phones to rural communities and businesses? **Mark 1=least important; 5= most important.....**

304. Do your village have good roads linking urban cities? **1=Yes; 2=No.....**

305. Do your village or nearby village have any public hospital? **1=Yes; 2=No.....**

306. Please could you provide information on the items below for 2005 and 2009 prices?

Items (Naira) Averages	2005	2009
Plot of land		
Maize/Kg (farm gate)		
Rice/Kg (farm gate)		
Sweet Potatoes/Kg		
Cassava/Kg		
Groundnut/Kg		
Chicken (live) mature		
Goat (live) mature		
Cow (live) mature		

307. Suggestions: If you wish to make any additional comments on problems and experiences you encounter or offer ideas on how rural livelihoods can be improved please use the space.....

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THANK YOU FOR COMPLETING THIS QUESTIONNAIRE

FIELD SURVEY PICTURES



Above: The Researcher standing 3rd from right with Research assistants during meetings and training for field work.



Local market for local traders and farmers



Above: Rice market and processing mill



Above: The researcher interviewing cassava processing operator



Above: A typical rural motorcycle repair workshop



Above: A typical rural village with non-paved road



Above: A rural village with access to paved road

Below: A Local primary School



Above: A rural Secondary School